

Public Cospaces

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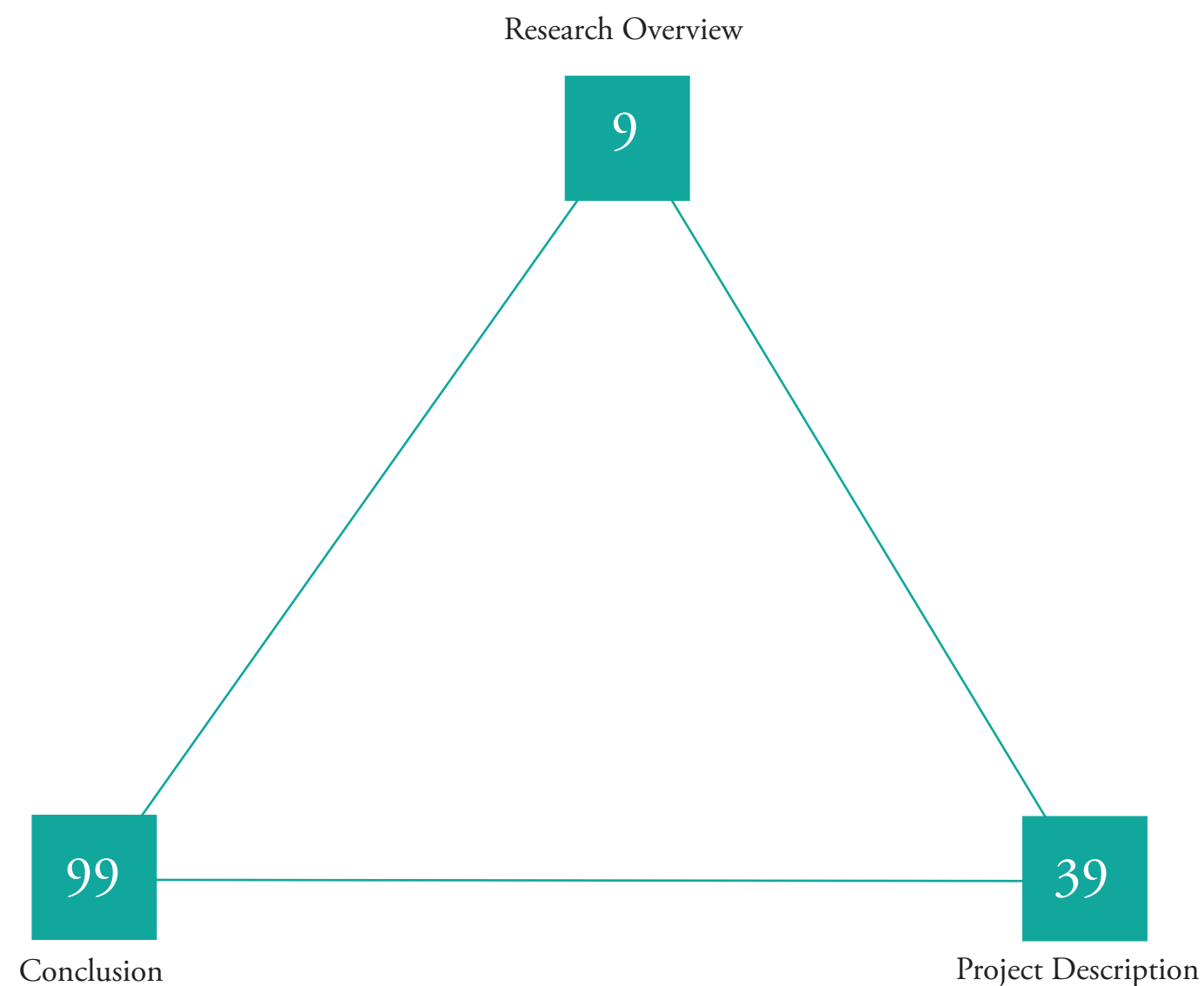
Allison Schultz

Public Cospaces:
Creating productive collaboration in public libraries.

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Research Overview

- 1.1 Abstract
- 1.2 Introduction
- 1.3 Research Question
 - Key definitions
 - Sub-questions
- 1.4 Justification
- 1.5 Limitations

1.1 ABSTRACT

The purpose of this project is to enable the development of public collaborative spaces. The designer saw a gap and need for public collaborative spaces, specifically within the context of public libraries. This document justifies what the need for collaboration is, why it is important in public sectors, and why these public collaborative spaces should be in public libraries.

In order to make a physical space for people to work, this research explored groups and individuals working conditions including their physical environment, interactions, resources, and more. Understanding the goals and elements of existing collaborative spaces, in non-public areas, was a key part of this research. A participatory design approach was taken to get the perspective of the type of users within collaborative spaces. The process in which these were researched was CASPI – collection, analysis, synthesis, prototyping, and implementation.

After incorporating the primary and secondary research together, four principles were developed as the key part for a conceptual framework. The four principles are Open, Flexible, Inspiring, and Practical. In addition, functions and properties are detailed variables within each principle. The principles, functions and properties combined will help enable productive collaboration within a public cospace.



1.2 INTRODUCTION

“Collaboration is a trend occurring in today’s society, however it is not a new idea. Because of life’s fast paced and complex lifestyle, it is not practical to understand and master all the knowledge and skills one might want to bring to the table for a project. Collaboration is the answer to complex work.”²⁶ Not only is it the more efficient and ideal way to work, collaboration brings innovation. Innovation occurs from human interactions, which then simply creates new ideas and insights. It is important to design for opportunities that allow for those random encounters of human interaction to happen. According to Stilgoe in *Landscape and Images*, there is a loss of random encounters with acquaintances and strangers.³¹

To create more random encounters, or unplanned collaboration, there should be an increase of spaces that promote those interactions. There are collaborative spaces in areas such as academic schools, co-working places, and in the workplace, but not in the public where everyone has access. The more spaces made for human interactions, the more collaboration occurs, the more innovation is created.

The research involved is to determine the purpose of public cospaces and what they should consist of (from potential user’s perspective). In order to understand and determine these things, a participatory design approach is used to study existing collaborative spaces (in non-public areas) and people’s working conditions; meaning current and ideal “conditions in which groups or individuals work, including but not limited to amenities, physical environment, noise level,” and their tasks or behaviors.⁹ The purpose of this thesis is to enable the development of public collaborative spaces (cospaces), specifically in public libraries.

Not only is it important to have cospaces in public libraries it is also important that libraries stay relevant. Cospaces in libraries are a perfect fit for several reasons. There is a lack of need of a physical space for information commons, because people have access to information at their fingertips. Libraries emphasis interactive activities so use the physical space for collaboration instead of only as an information commons. Public libraries are an already existing place that is accessible to everyone, facilitates work and learning, is a hub of information, has a lot of space to work, and is relatively quiet. There are things that a 21st century innovator could need.

This document shows the process of how this research was conducted, as well as the results. The data collected was analyzed and synthesized into concepts. The concepts informed the framework that shows the purpose and principles that a public cospace should have. To help innate the implementation, a process was created to take people through and know how to use the framework.

1.3 RESEARCH QUESTION

How might understanding *[people’s working conditions]* and *[existing collaborative spaces]* inform a *[conceptual framework]* to enable the development of *[public cospaces]*?

Key Definitions

[people’s working conditions]:
Current and ideal “conditions in which groups or individuals work, including but not limited to amenities, physical environment, noise level”, and their tasks or behaviors.⁹

[existing collaborative spaces]:
Places within non-public spaces; specifically co-working spaces, academic libraries (Commons 2.0), and in the workplace.

[conceptual framework]:
An interconnected set of ideas about how a particular phenomenon is related to its parts; serves as the basis for understanding the correlational patterns of interconnections across events, ideas, observations, concepts, knowledge, interpretations and other components of experience.³²

[public cospace]:
Collaborative, physical work environments, within a public place.²²

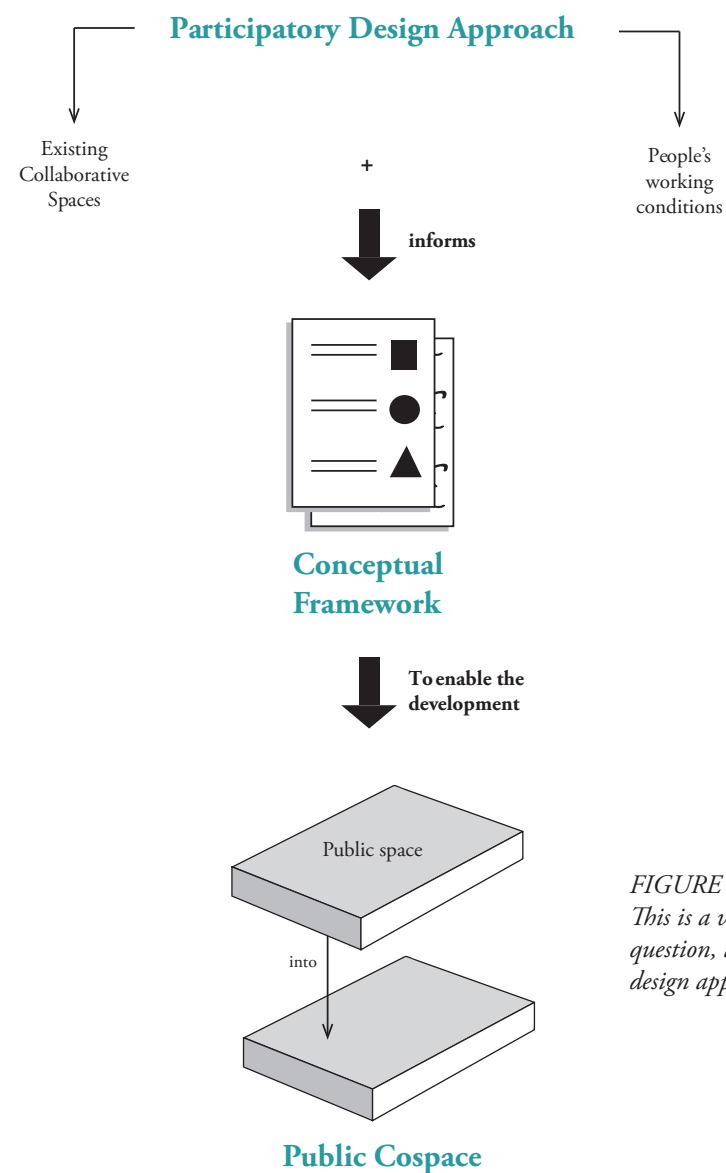


FIGURE 1.3.1.
This is a visual representation of the research question, also including the participatory design approach to the project.

Sub-questions

1. How might participatory design be used to help understand the goals of existing collaborative spaces? - Collection
2. Why might the goals of existing collaborative spaces be transferable to public cospaces? - Analysis
3. How might understanding people's working conditions determine what factors are needed in a space for productive collaboration to take place? - Synthesis
4. How might a framework be used to help guide the development of public cospaces? - Implementation

1.4 JUSTIFICATION

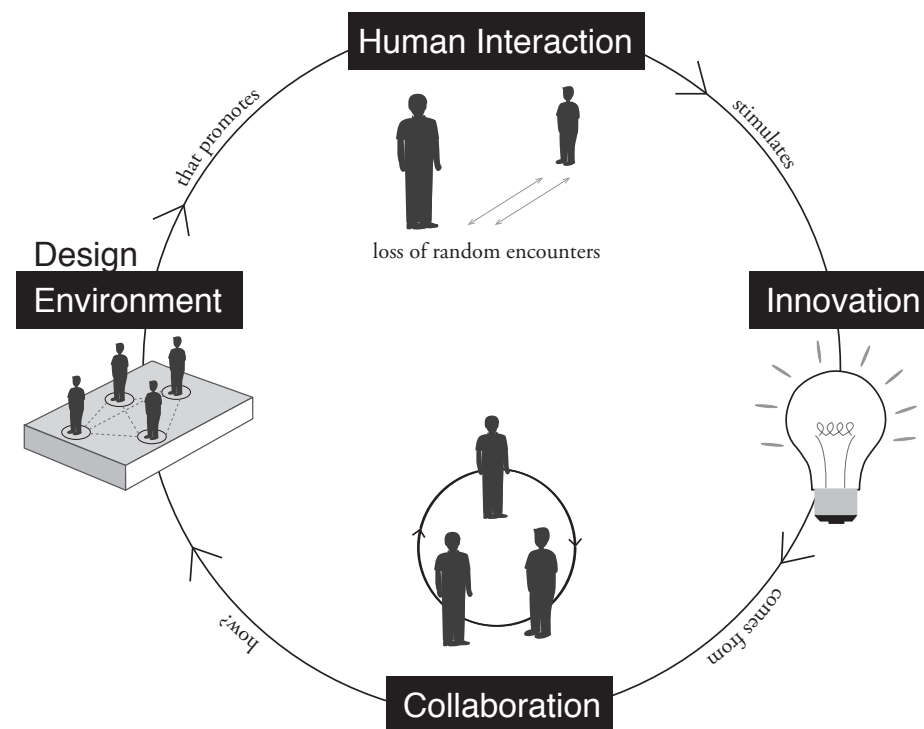
Definition of Collaboration

Even though collaboration is a trend occurring in today's society, it is not a new idea and it has an interesting history in design. Conscious collaborative association of various kinds dates back to the 1930s. A book from the mid-twentieth century, *Group Practice in Design*, explores collaborative variations in design practice in the United States and Britain. Given the complexity of contemporary life, time is too short to process and master all the knowledge and skills one might want to bring to the bear on a project. Consequently, if one aspires to do large or complex work, collaboration provides the only reasonable context for development.²⁶ For the means of this project, collaboration is being defined as a group of people or diverse individuals with different but complimentary capabilities, expertise, and ways of working, that come together to solve a particular problem or task, or build or disseminate knowledge.²⁶ This definition is a combination of Chris Barlow, Alain Rochon, and Jay Rutherford's definitions of collaboration.²⁶

Why Collaboration

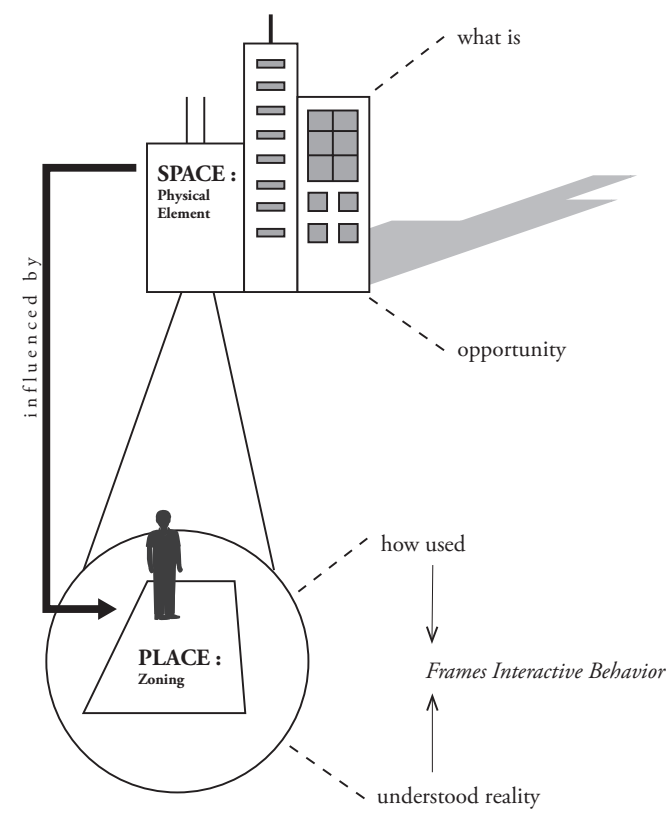
According to Stilgoe in *Landscape and Images*, there is a loss of random encounters with acquaintances and strangers. Designing opportunities that allow for those encounters to happen among groups of people is important because they stimulate new ideas.³¹ This idea is also represented in *Creating the Right Environment* by Jenkins. "Knowledge, insights, and new ideas tend to come from humans interacting both in formal and informal settings". Human interactions stimulates innovation.¹⁷ This is where collaboration shows its' importance. The book titled *Winners! How Today's Successful Companies Innovate by design*, Thackara emphasizes why innovation is so important and that they key to being innovative is through cross-disciplinary or interdisciplinary collaboration.³³ A series of case studies was done and shown in the book *Where Good Ideas Come From* by Johnson. The studies show that environment has the ability for innovative thoughts to occur.¹⁸ Kemp and Baker in *Building Community in Buildings*, also believe that designing environments to promote interaction raises opportunities for random encounters.¹⁹ SEE FIGURE 1.4.1.

FIGURE 1.4.1.
A synthesize of secondary research justifying
the importance of collaboration.



"Collaboration among individuals from different disciplines can make the difference between innovative and conventional solutions. Often innovative ideas can be found in the cracks between current domain definitions bringing together people with widely different backgrounds increases the likelihood of stumbling on these useful intersections. Keep in mind that as people work together on common problems, their approaches may vary. Multidisciplinary teams – groups of people with different core talents and capabilities – can fail if misunderstanding trumps collective effort."¹²

FIGURE 1.4.2.
Shows the difference between place and space
and how they work together.



Place vs. Space

This document talks about spaces and places, so it is important to define each and be able to differentiate the two. To get an understanding, the design researched used several references. In *Creating the Right Environment*, Jenkins identifies space as the physical element that makes up an environment, and that place influences space and that place is more important, in terms of hierarchy.¹⁷ Doorley and Whithoft briefly mention in their book titled *Make Space* that “places are broad spatial types that share an overall purpose. “Zoning” for your space.”¹² The last and most relevant article that talks about space vs. place is *Re-Place-ing Space: The Roles of Place and Space in Collaborative Systems*. This says place is in space. They talk about how space is the opportunity, while place is the understood reality. Space represents “what it is”, while place represents “how it’s used.” “Place is a space with something added: social meaning, conventions, cultural understanding about role, function, and nature, etc. to help us frame the appropriate behavior.”¹⁴ SEE FIGURE 1.4.2.

Why Collaboration in Public

Collaboration in Existing, Non-public Areas

There are physical spaces (i.e. academic libraries, coworking spaces, maker spaces, and the workplace) where collaboration is happening, within specific types of areas (i.e. semi-public, sem-private, private, and public). SEE FIGURE 1.4.3. In order to identify what specific type of area each physical space falls into, it is necessary to define why they are considered to be a part of that specific type of area. Academic libraries are defined as semi-public because anyone is allowed to come inside and use general facilities. However if you want to check out books, use a computer, or rent out a room, you have to be a student and have a student identification card or number to prove you are enrolled. Semi-public places may have stricter rules than outside.³⁶ Coworking spaces and maker spaces are defined as semi-private because anyone is able to be considered to work in these spaces, however you do have to apply to become a member and pay a price. This limits the space to people who are Okay-ed to be a member, and those who have the money to be a member. Workplaces are defined as private because you have to be employed with a business to come inside and use their workspaces.

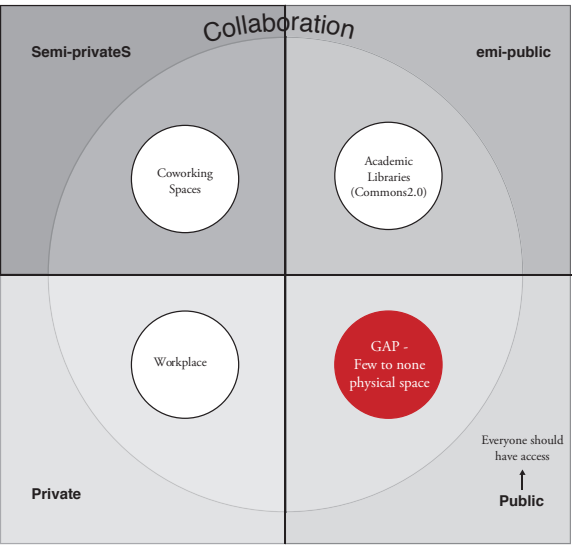


FIGURE 1.4.3.
By looking at collaboration through the lens of physical place, this visual shows that collaboration is happening in existing, non-public areas, but that there are not collaborative spaces readily available in a public space.

Academic libraries are starting to design places for collaboration, called the Commons 2.0. The Commons 2.0 incorporates flexible workspace clusters that promote interaction and collaboration, and comfortable furnishings, art, and design to make users feel relaxed, encourage creativity, and support peer-learning.³⁰

Cities and communities are hosting spaces for collaboration called coworking spaces. The number of coworking spaces have increased by 400% in the past 2 years.¹⁰ Maker spaces are community-operated physical places, where people can meet and work on their projects like art, hardware, electronics, robotics, and fashion. Generally, coworking spaces and maker spaces have a fixed price and are contracted. People have to apply and be accepted to become a member at a coworking space. Not only is collaboration happening in smaller cities and communities, it is happening in large, well known corporations such as Google. The workplace is a popular place that is bringing in designated work areas that allow for collaboration. The Commons 2.0 brings together a wide range of elements to support new and creative ways of learning, particularly the emphasis on team-based problem solving that more closely resembles the ways in which successful organizations and businesses operate today.³⁰

There is a need for collaborative spaces in the public sector, this paragraph explains why. Given in prior examples, the barriers to collaboration are access and cost. The collaborative places available are only for certain people that have to be admitted and/or pay a fee to use the facility. Those people not involved in the academics or a workplace or can't get access or have money to pay for a co-working space, also have ideas and need a place to work with human interactions. Another barrier to collaboration is the knowledge or awareness of being collaborative and it's affects. In order to overcome these barriers, the gap of little to none public spaces for collaboration needs to be filled. There needs to be public spaces that are conducive for collaboration, which can create more innovation. Public cospace makes being innovative affordable and accessible. Having a public cospace may allow collaboration to become more known, giving people awareness about it.

Factors in Existing Collaborative Spaces

Because public cospaces do not have relevant theories supporting it, this research project will look at collaborative spaces within each area: private, semi-private, and semi-public. There are several factors to consider when studying the existing collaborative spaces such as, the goals or purpose, the types of interactions that happen, specific tasks that people do within those spaces, and what type of productivity is being accomplished. These factors are different for each physical space, knowing these on a high level and more in depth will help inform the framework that will enable the development of public cospaces.

The first thing being looked at here is the goals or purposes of each space. Co-working space's purpose are for people come here to collaborate by using each other's strengths, ideas, and to make connections. Each co-working space even has its own specific purpose. For example, bringing entrepreneurs and startups into this environment can help develop jobs and other opportunities for the community. Academic libraries have a different purpose for their collaborative spaces, which is to foster student learning in new and creative ways, like peer-learning and team-based problem solving approach to learning. The collaborative spaces within businesses are trying to create random serendipitous encounters between workers from different departments. In the article Landscape and Images from Charlottesville: University of Virginia Press, Stilgoe says random encounters of people, stimulates innovative ideas.³¹

The types of interactions that people experience with each other are important to identify in any space. Some of the interactions of people in the different physical places are similar, but they do have their differences. In academic libraries, the commons 2.0 hosts groups of all sizes, or individuals, that can come to work collaboratively with other groups or within their own group, either preplanned or random. Interactions of individuals that come to co-working spaces and maker spaces are attempting to collaborate with other individuals. The types of interaction happening in the workplace are individuals or groups working in the same place that may or may not be planned encounters between one another.

Once the interactions of people have been established, specific tasks of each physical space can be looked at. At academic libraries students think analytically (not just search for information), develop/refine their critical thinking, engage in a collaborative learning process, and use technology to collaborate virtually.¹ From previous encounters with co-working spaces (and the workplace), it has been discovered by this student, that the tasks people are engaging themselves with in co-working spaces are bouncing opinions off others, getting others' expertise, generating ideas with each other, working on individual projects, and sharing tools with each other. Lastly employees talk amongst each other, work on individual assignments, collaborate together to accomplish a specific goal, share information with each other, and look at each other's work.

One of the most important factors to consider is what type of productivity is being accomplished. The output that comes from students working in academic libraries is the information learned, the retainment of knowledge, what letter grade they receive, and more importantly the collaborative skills they practice. The type of productivity people experience in co-working spaces and maker spaces are ideas implemented, and connections made. The workplace, like academic libraries, has more strict levels of productivity they want to happen for the people involved. Within the workplace a product, service, or idea is implemented, and people want to make a profit. Creating a physical environment that can benefit the productivity they are aiming for is important.

Everyone Should Have Access

Because collaboration already exists in each of these physical spaces, the factors mentioned above can be determined on a high level. Knowing those factors can help inform and propose what the need for public cospaces are and what could be in public cospaces. The purpose of having collaborative spaces in public areas is to have a physical space that allows anyone, anytime, to collaboratively work in groups or as individuals. The other physical spaces where collaboration is happening are not open for anyone, unless they are a part of that organization, or you have to pay a fee. Since collaboration creates innovation, everyone should have access be able to innovate at his or her best.

The interactions public cospaces should host are planned and unplanned collaboration. Meaning pre-existing groups that plan on coming to that space to collaborate among each other within that group, and individual work promoting random encounters. Specific tasks that these groups of people and individuals at public cospaces could be to look up and share information to help complete their goal, engage with others and use their expertise to create clarity, generate ideas or concepts, and even turning an idea into something tangible. These tasks will help accomplished their purpose for coming to the space, which is to solve a particular problem or task, or build or disseminate knowledge.

Why Collaboration in Public Libraries

Trends of Society

Public libraries are continuously facing a lack of need of physical space as an information commons, a hub for digital information. The reason for the public library being challenged as a physical space for an information commons is because so many people have access to digital information at their fingertips, in their own homes, on the go, and in many other places.⁶ So, we need to find another use for the public libraries physical space. Combine this idea with the fact that libraries emphasize interactive activities and learning by communication, contribution, participation, and engagement.²⁷ These activities can be applied to collaboration. Therefore, we have a physical space for collaboration.

“A physical space for a collaborative and social interactive place, that facilitates the acquisition of knowledge/skills as a result of those interactions from like-minded others.”⁶

Take a look at the trends going on in libraries. SEE FIGURE 1.4.4. Originally, libraries were a place to hold all sources of information, in the form of books. As society changed and technology became more common, the library had to adjust to this need by adding computer hubs, known as the information commons. The Information Commons was a natural extension of the library’s traditional mission in a wired world.⁴

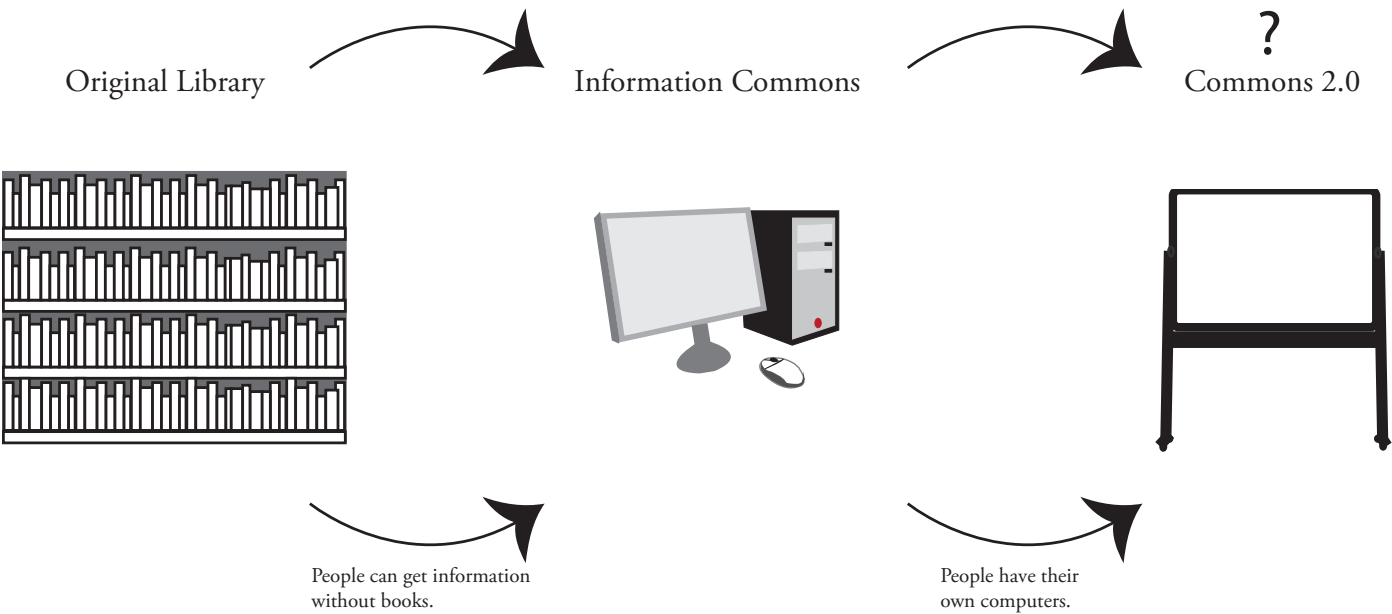


FIGURE 1.4.4. Trends of libraries, starting from books, to a digital information commons to the collaborative commons 2.0.

*“What should the role of the library be when it no longer needs to be a warehouse of books and a wealth of high-quality material is now accessible electronically without setting foot in library doors? What does this revolutionary chance mean for the creation of library spaces?”⁴
Geoffrey T. Freeman*

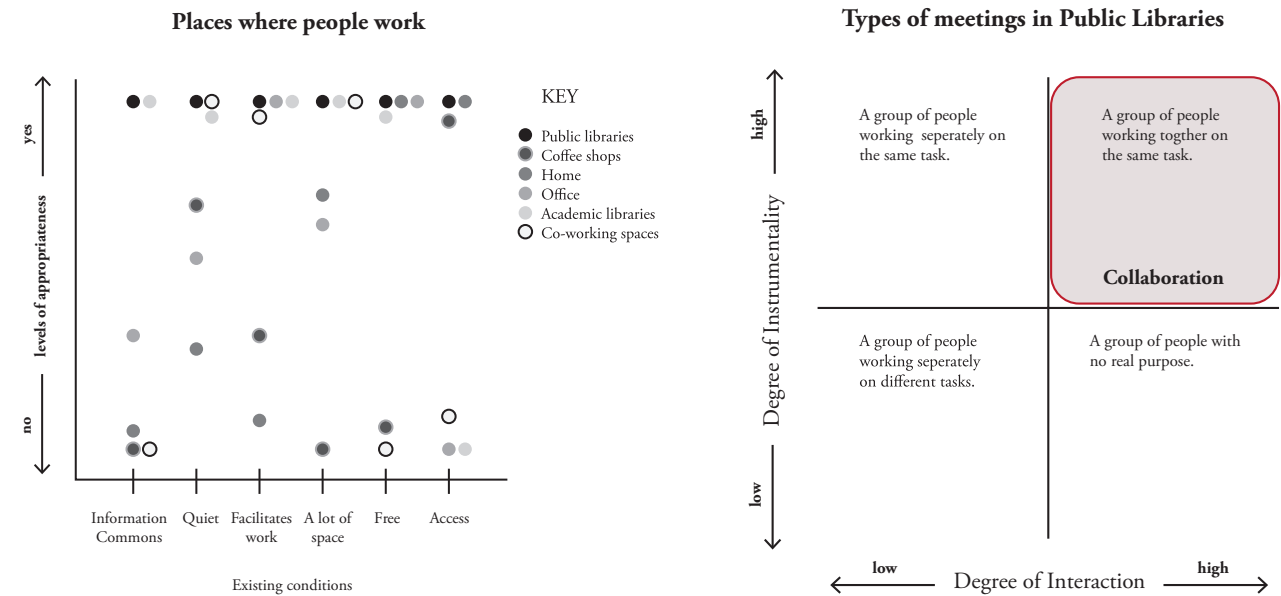
Now that so many people have access to all sources in the form of technology and computers at their fingertips in their own homes, libraries are in need of reshaping their purpose, again. Academic libraries are already starting to bring the important and popular trend of collaboration into their spaces. This new trend is called The Commons 2.0, an extension of the information Commons.⁴

Cospaces in Public libraries are relevant because not only is collaboration continuously happening; libraries are looking into reshaping their role to keep up with society. The concept of collaboration arises in almost all conversations concerning the future direction of American libraries. Collaboration will become a common and important focus.¹⁰ While some individuals are pessimistic about the future of libraries, many in the community envision...new philosophies, new technologies, and new spaces to meet the needs of all users more effectively than ever before.¹⁵ Cospaces in Public libraries are also practical because they are accessible to everyone and have everything a 21st century innovator could need: Internet access, work space, reference materials, and more.

Having these cospaces is beneficial for libraries, however there also needs to be a benefit for the patrons of the public libraries. Cospaces in libraries give people access to a place that allows them to collaborate. Patrons are looking for “furniture that is easy to move and spaces that allow for different kinds of collaboration.”²⁹ The use of creative, flexible spaces holds great promise in the local public library. Already public libraries across the country are embracing new trends in community buildings in an effort to provide relevant, useful, and flexible space in which local populations can congregate and interact. The future public library is one of multiple destinations - a place for patrons to experience the world of information in a variety of new ways.¹⁵

“As libraries struggle to stay up to par in the 21st century, our minds stray to technology. But, collaboration...that’s the 21st-century skill that’s needed most.”¹⁵

- Mary Chute, Deputy Director, Library Services, Institute of Museum and Library Services.



An Already Existing Place...

Besides that fact that public libraries should go with the trends of society, more importantly public libraries are a perfect fit for hosting cospaces for many reasons. They are an already existing place that has several existing conditions for productive collaboration. Public libraries are a hub of information; they will never completely get rid of resources to find whatever information needed. They are quiet, with some background noise of other people working is still happening, but there is not much of unrelated work noise that cause distractions. Most libraries have a lot of space, but even at their most cramped, they have space meant for work SEE FIGURE 1.4.5. Public libraries facilitate work and learning. It is a place where people meet, with a variety of meeting types. There are four different types of meetings held at libraries. There is a high and low degree of instrumentality and of interaction.¹ Instrumentality represents the quality of work being done, while interaction refers to the action between people. Having a high degree of both instrumentality and interaction is a form of collaboration. Public libraries should focus on increasing meeting types with high levels of both instrumentality and interaction to enable productive collaboration SEE FIGURE 1.4.6. Most importantly, public libraries as a whole already have characteristics of a public realm. “The

FIGURE 1.4.5.
Upper Left: a matrix that shows the 4 meeting types that take place within public libraries.
FIGURE 1.4.6.
Upper right: a graph that shows a range of how appropriate different places to work are based off existing conditions.

library facilities are open and accessible to all, and people from different strata of the population in the local communities.”¹

Even though the designer is suggesting and focusing on having public libraries host public cospaces, the contexts of public cospaces can be transferable. In order for public cospaces to be in another public place, it should meet all the existing conditions mentioned earlier. Existing conditions such as a place that facilitates work and learning, has a lot of workspace, a hub of information, and lastly a place that is available to everyone including no cost SEE FIGURE 1.4.5.

“ The library is the only centralized location where new and emerging information technologies can be combined with traditional knowledge resources in a user-focused service-rich environment that supports today’s social and educational patterns of learning, teaching, and research. ”⁴

Why Participatory Design

This research project will be using a participatory design approach to receive the information needed. Here, participatory design can be defined as “an approach to design that actively involves the potential users or stakeholders in various co-design activities throughout the design process”.²⁸ There are several approaches to research, so why use a participatory design approach?

Participatory design has grown rapidly over the last 20 to 30 years. For more than two decades non-designers have been increasingly involved in various design activities through a large number of participatory design projects all over the world. Participatory design today spans across a broad spectrum of domains and makes use of a broad repertoire of tools and techniques in both commercial, community oriented and research contexts.²⁸ However just because this approach of participatory design is increasingly popular and used in multiple domains, does not completely justify why it should be used for this research project.

The benefit of using a participatory design approach allows the designer to gain rich data from potential users for the product or service or experience that is being designed. Getting the perspective of potential users is important because they will be the ones using that space, in this instance. You want to design something that will fit the needs of the users, so by having the users co-design with you, you are able to see what their needs are. The design process can involve people which increases the chances that the environment created will be community oriented. Ken Cunningham and John Spencer believe that it is important to get people’s perspective that will occupy the space, by observing and imagining what the space might become. They treat their users as producers, not consumers, throughout the process.⁷

Participatory design has a wide selection of methods and tools that are catered towards using with people, specifically the potential users. This research project will be using specific methods from the participatory design method pool like interviews, activity analysis observation, collaging, network mapping, and picture stimulation/card sorting.

Justification Overview

1 Why Collaboration

Innovation

2 Why Collaboration in Public

It is already happening in non-public areas

- ▶ academic libraries
- ▶ coworking spaces
- ▶ in the workplace

Everyone should have access to Innovate

3 Why Collaboration in Public Libraries

Lack of need of physical space for information commons

- ▶ because people have access to information at their fingertips

They emphasise interactive activities

- ▶ contributing
- ▶ engaging
- ▶ participatory

Go with trends of society

- ▶ academic libraries area already integrating cospaces
- ▶ people can access information on their own, without a physical library
- ▶ collaboration
- ▶ minimize staff, reduces cost
- ▶ designing spaces adaptable to change for the future

An already existing place that...

- ▶ is accessible to everyone, free and no contracts
- ▶ facilitates work and learning
- ▶ is a hub for information
- ▶ has a lot of space
- ▶ is quiet (some background noise of people working)

a physical space for collaboration

1.5 LIMITATIONS

There are many different viewpoints of what it means to be collaborative because of its multiple domains of exploration and the particularities of its execution. For the parameters of this research project, the definition of collaboration that will be referenced to is a combination of Alain Rochon and Jay Rutherford's definitions. "A group of people with different but complimentary capabilities, expertise, knowledge, way of working, and personality to solve a particular problem or task, or build disseminate knowledge within a specific time frame."²⁶ This definition fits the parameters of this project because this is about pre-existing groups with different things to bring to the table in order to accomplish something, whether making it to the end goal or expanding knowledge.

The type of collaboration this research project is aiming to ultimately bring into public libraries cospaces, are planned and unplanned collaboration that support groups and individuals. Planned collaboration defined as groups of people who plan to go to that physical space to work collaboratively together. Unplanned collaboration defined as individuals that have the opportunity for random encounters with strangers or acquaintance. The groups using these cospaces may or may not be already acclimated with each other. They may either be from the same discipline or department or they can come from a multidisciplinary background.

Collaboration is happening in both physical spaces and virtual spaces. Some of the many virtual collaborative spaces that the Internet provides are social media websites (i.e. Facebook, Pinterest, twitter, Instagram), blogs, and tools such as Google docs and Prezi. Also, a form of collaboration going on in libraries is technology-based; however, this research project will not be focusing on the virtual or technological

aspect of collaboration spaces. Rather this research will be focusing on physical public cospaces, because there are already several virtual public collaborative spaces. Focusing on physical spaces allows the design of the environment to be based on what kind of behaviors that are wanted or needed in that space. In the book, *Community: The Structure of Belonging*, Peter Block Says, "Physical space is more decisive in creating community that we realize."⁷

The focus on collaboration in academic libraries is about promoting new and differing learning styles within academic communities. Since this study is on public libraries, the focus will be about promoting new and differing working styles within communities. However, just because users of these cospaces will not necessarily go there to learn content, they might acquire skills throughout their process that they can use in the future. The purpose of groups of people and individuals coming to these physical cospaces will be to solve a particular problem or task, or build or disseminate knowledge, in a collaborative way that encourages interaction among each other. The working style for these cospaces support a team-based problem solving approach using creative behavior.

Collaboration can happen in several different forms. Many times collaboration calls for having a facilitator or formalized process that provides guidelines. For the purpose of this research project, no facilitator or formalized process will be necessary to collaborate. There is no facilitator or formalized process in this research project, because that is too much to consider within this time frame. The future could possibly utilize librarians as facilitators.

Even though there is no formal process or facilitator to assist collaboration for patrons in the cospace, this researcher will be creating a process to help initiate a framework she will also create. This process is for people who will be implementing public cospaces, and will be a guide for how to use the framework.

The focus of this project will be on public libraries in general, not on one specific public library. The purpose of focusing on public libraries in general, is because all public libraries are different. Even though public libraries share some high level trends, each public library has their own type of users with their own needs. Looking at public libraries on a broader spectrum may allow several public libraries to implement public cospaces, rather than just one.

Since this researcher is not focusing on a specific public library, she is not studying the needs of library patrons, on an individual or participatory design approach level. She will learn a little bit about public library user needs in general, because that coincides with learning about library trends. She will be more focused on studying the need for public cospaces, people's working conditions, and existing collaborative spaces in order.

The results of this research project could potentially be used to generate a tool that provides an understanding of what users need to know about the cospace. That tool could act as a facilitator of the space by providing the best way to utilize the space to fit their needs. However due to time constraints, this cannot be a part of this project.

2 Project Description

2.1 Introduction

Design Process

Participatory Design Approach

Contexts

2.2 Research & Insights

Process

Content

People's Working Conditions

Existing Collaborative Spaces

Recap

2.2 Outcomes

Process

Content

2.3 Results

Sub-questions

Research Question

2.1 INTRODUCTION

Design Process

Following a process helps you think your way through any situation and specifically helps guide the designer through this project. By following a process you will deliver quality results.³

For this thesis project, the design researcher used a combination of two design processes: Simplex and Kumar Innovative Process. The first process the design researcher used, Simplex, was created by Dr. Min Basadur SEE FIGURE 2.1.1. “Simplex is a creative process of finding and solving problems and implementing solutions that result in real change.”³ This process has three stages and eight steps including the first three steps in phase one, steps four and five in phase two, and the final three steps in phase three. The three stages in order from start to finish are finding problems, solving problems, and implementing solutions. The 8 steps in order from start to end are problem finding, fact finding, problem defining, idea finding, evaluating and selecting, action planning, gaining acceptance, and taking action.

The next adapted design process used is called the Kumar Innovative Process SEE FIGURE 2.1.2. This is used for descriptive modeling, and creating abstract pictures about the patterns that we recognize about reality. His model shows a four-quadrant matrix of real to abstract that starts with step 1: know the real (research or collection), step 2: know the abstract (analysis), step 3: make the abstract (synthesis), and lastly step 4: make the real (prototyping and delivery with implementation).¹³

This researcher used a process called CASPI, which is a variation of Simplex and Kumar’s model. CASPI stands for collection, analysis, synthesis, prototyping, and implementation. Both figures show how CASPI overlaps each process. This research phase starts out in collection. To study existing collaborative spaces and people’s working conditions, the designer had to collect data. She chose to collect data using a participatory design approach.



FIGURE 2.1.1.
The Simplex Process created by Dr. Min Basadur.

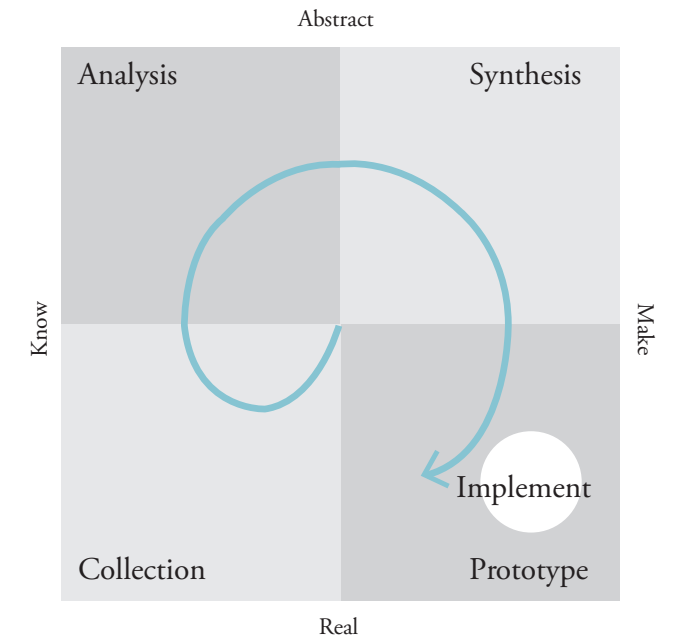


FIGURE 2.1.2.
The Kumar Innovations Process.

Participatory Design Approach

Because this project is about creating a physical space for specific types of people, it was important to identify and understand the needs of these people, possible future users. Those types of people will be groups of people or diverse individuals that come to solve a particular problem or task, or build or disseminate knowledge. The researcher studied existing collaborative spaces and people’s working conditions. Studying existing collaborative spaces provided the researcher with information about what does and does not already work. Looking at people’s current and ideal “conditions in which groups or individuals work, including but not limited to amenities, physical environment, noise level,” and their tasks or behaviors helped the researcher understand what could be in the space.⁹

There are several possible approaches to use throughout a process. The approach this researcher took was a participatory design approach. This is an approach to design that actively involves the potential users or stakeholders in various co-design activities throughout the design process.”⁴ It is important to get the perspective of the future potential users, because they will be the ones using the space. Design has to have the right form and function or else it won’t be used properly or may not be used at all. The purpose of the design needs to fit the needs of the users. Asking the potential users directly, allows the designer to identify their needs. Ken Cunningham and John Spencer believe that it is important to get people’s perspective that will occupy the space, by observing and imagining what the space might become. They treat their users as producers, not consumers, throughout the process.⁷

“The intrinsically human-centered nature of design thinking points to the next step: we can use our empathy and understanding of people to design experiences that create opportunities for active engagement and participation”⁸

Contexts

This research focuses on studying existing collaborative spaces and people’s working conditions. There were several contexts where the research took place. There was some overlap, as part of understanding people’s working conditions took place in those existing collaborative spaces, along with other places where potential users may be working like coffee shops or from their home. The existing collaborative spaces were in co-working spaces, academic libraries, and at the workplace. Within each of these contexts, the researcher was able to gather data from the users as well as high-end employees. To compare these contexts to the Places where people work chart and the types of meetings in public libraries matrix , refer back to Justification SEE FIGURE 1.4.5. and 1.4.6.

The first co-working place this researcher included in her research was the Speakeasy, located in Broadripple of Indianapolis. The Speakeasy has an industrial, laid back feel within a warehouse with other small start-up companies. This place only has a few group meeting spaces, so it is a little noisier with people working and talking in the open areas. There is a lot of space to spread out and work, on white-boards and flat surfaces. A second co-working place is Fishers Launches, located in Fishers, Indiana. Fishers Launches as a more professional and less social feel than the Speakeasy. They are settled in the basement of a public library but are not associated with it at all; it acts as an independent co-working place. Because Fishers Launches is more professional feeling, it has a lot of meeting rooms, and for many sizes. This space is more on the quiet side because most people that talk to each other find a corner or room. Lastly, the researcher visited Indy CoZ, which is located in Castleton of Indianapolis. The CoZ also has professionalism with clean lines, and their building is also part of a larger building. Inside the CoZ, there were many sound equipped rooms for meetings to take place. However it did not have much surfac space.

Even though there were two academic libraries with collaborative spaces that this researcher spent time at, they were very different. The Warren Central Media Complex is at a high school campus for children middle school through 12th grade, located in Warren Central of Indianapolis. The collaborative spaces were mixed into the rest of the library, so there was a lot of easy access to any information needed. This concept also makes it somewhat noisy, depending on time and use. Because this is made for many groups of kids, there are no completely closed off meeting rooms. However it does have a lot of wall and table space for the children to do their work. The second academic library the researcher included is IUPUI's college of Honors, located in IUPUI's University Library on their campus downtown Indianapolis. This collaborative space is for honor students only, and is shared with the admission staff of the honors program. This space is a small sectioned off area within the library, not incorporated into the library like the Mediaplex at Warren Central. This makes it a little harder for students to access books. They had a variety of spaces, which made some areas more quiet than others. Because this area is specifically for honor students and staff only, it is not accessible to anyone that comes into the library.

FIGURE 2.1.3.
Far left: Warren Central Mediaplex
Middle: Indy CoZ
Far right: The Speakeasy



FIGURE 2.1.4.
One of the place types in the IUPUI honors college, consisting of move-able furniture and smart-board.

There were a total of three workplaces with collaborative (or agile) workspaces. The first one is Cummins, located in Columbus, IN. Cummins has several buildings within Columbus, so this researcher went to two of the Cummins Collaborative Spaces, which have the same basic concept. These collaborative spaces are large areas that take up most of the building, designated for work. Cummins colleagues collaborate a lot, so they have a lot of separate meeting rooms. They have high security and do not let anyone to their workspaces without permission. Eli Lilly and Company located in downtown Indianapolis, has a campus of buildings that have several collaborative workspaces. Their collaborative spaces are dispersed throughout many areas, like cafeterias and transitional walkways, so they incorporate a higher noise level. Lilly was one of the first workplaces in this area to implement this style of working. Another workplace the researcher visited was Rolls Royce, which is also located in downtown Indianapolis. Rolls-Royce is set-up very similar to Cummins Collaborative spaces. One side of their building is dedicated to their agile workspaces. Every day, employees work at a different desk to promote flexibility and interactions. All three of these workplaces brought in a company called Choreo. The Choreo Group transforms workplaces into spaces that foster increased productivity.

Process

Before getting into the content of research and findings within this project, it is important to talk about the process the designer went through. Mentioned earlier, the process used to guide the entire project was CASPI. Within each phase, the designer had a specific way of doing the work that included several methods. In order to effectively be a design researcher, especially when using participants in your research, separating content and process allows the realization that every participant brings something different.³

To talk about content without process will provide poor results and lack of understanding. To give readers a holistic understanding of the project, include the process and separate it from the content. “The ability to separate process from content permits you to learn how to mainstream innovation” says Dr. Min Basadur in Simplex: A Flight to Creativity. Distinguishing the two is important for the design researcher of the project, as well as the readers.³

Collection is the first phase of the design process. There are several ways to collect data like secondary research, or out in the field. Collecting data in the field can be observation based only, or talking with randomly selected people. In this case, the design researcher did research out in the field and was very intentional of the types of people chosen to talk to. Not only did she ask participants questions, but also she engaged them in the research as co-creators and future users of the space. This collection phase was the best time to get potential users perspectives. Therefore, the participatory design approach was highly used in this phase of the project.

Collecting this data continued throughout approximately 6 weeks. All of the methods were not done simultaneously throughout the entire collection process. Instead they were built on each other along the way to receive the information needed. Each method was chosen very intentionally and formatted to meet the needs of this research project, considering things like context, participants, time, and the design researcher’s timeline for the project, but most importantly to receive specific content. To see each method in detail, see Research and Insights Content section.

Even though throughout the research the design researcher gained some knowledge of the data, to really understand the large amounts of qualitative data received, the designer must make sense of it. Data does not become information until you make sense of it. Once that data becomes information, you can start to see insights. This part of the process is called analysis, as Hugh Dubberly puts it...

“Analysis begins as thoughtful reflection on the present and continues as conversations as the possible.”¹³

There are several steps and methods to analysis and making sense of the data. The first step the designer took in breaking down the data was to transcribe it. In transcribing, the designer wrote out each piece of data onto a post it note. To keep everything organized the designer transcribed each research method separately. If the method had more than one type of data set, it was transcribed on a different color post-it. For example, each interview question was done in a different color and for the picture stimulation/card sorting the positive and negative comments were transcribed in different colors. Once the data is unpacked and transcribed, the next step was to categorize the data within each method done from research. This is the beginning stage of pattern finding.



FIGURE 2.2.1.
Part of the pattern finding process during the analysis phase.

Pattern Finding

After seeing all the data unpacked and organized by research method, the designer wanted to see the patterns within to understand the data. Seeing patterns and repetition shows that something is important because multiple people had the same thought. Patterns create categories and sub-categories, which can show their relationships with hierarchy. This led to affinity diagrams.

Affinity Diagrams

Affinity Diagrams are diagrams created by “clustering elements together according to their relationships.”¹⁶ After looking at the categories found from pattern finding, the designer mapped them together to make more sense of the data and relationships. Adding descriptions of their relationships are important in affinity maps, because that identifies what that connection is and easily shows others without explaining. This method is a useful way to identify connections and show opportunities. The designer created an affinity map for the goals of existing collaborative spaces and people’s purposes for using those spaces. This method helped to understand which goals could be transferable to public cospaces.

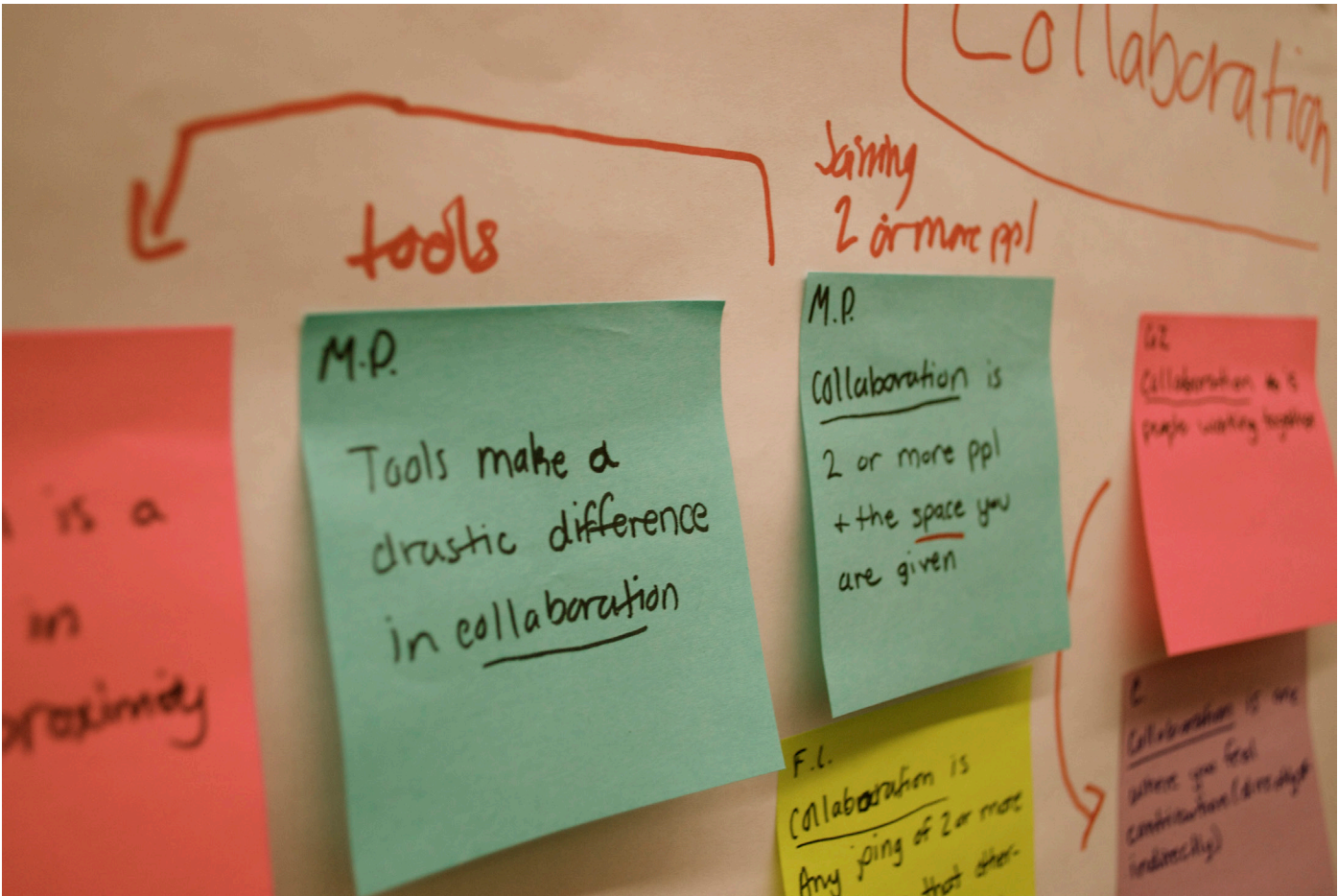


FIGURE 2.2.2.
Part of the analysis from surveys done with high-end employees of existing collaborative spaces; what collaboration means to them.

Content

Existing Collaborative Spaces

There were two things the design researcher needed to research and gain understanding about that informed the conceptual framework. The first part of the research was looking at existing collaborative spaces. Mentioned earlier, there are other collaborative spaces in non-public areas such as co-working spaces, within the workplace and academic libraries SEE FIGURE 1.4.3. Understanding the goals and purposes of these spaces, what types of people come to these spaces, why those people come to these spaces, and the design elements within these already existing spaces, not only helped determine what could be in the space, but also the goals of public cospaces.

To gain these understandings, certain methods were conducted. They include Interviews, Basic Observations, Surveys (with 5 Whys), and Real World Meetings. The following describe each method, how it was used, and the insights that came from them.





BASIC OBSERVATIONS & TOURS

Research

When doing any research about a particular context, one of the first steps is to go to the context. The design researcher toured and got a basic understanding of each collaborative space by spending some time in each space. This allowed the researcher to understand what the environment is like, the types of people and their interactions within the space, and some of the amenities and tools within the space. The places the design researcher got to spend some time in were at co-working places: The Speakeasy, The CoZ, Fishers Launches, and workplaces: Cummins, Lilly, Rolls-Royce, and academic libraries: IUPUI honors college, and Warren Central Mediaplex.

Insights

When touring and doing a basic observation, the design research saw many similarities between the existing collaborative spaces. Those similar factors were having comfortable seating, having a variety of workstations, having technology, meeting areas, common areas, open space, and the ability to allow people to be mobile (chairs with wheels, WI-Fi).





INTERVIEWS

Research

Interviews happened throughout the design research phase, and some interviews happened simultaneously with the basic observations and tours. While the researcher was at each collaborative space receiving a tour, interviews were held with high-end employees, such as owners or director. Interviews are in depth surveys or questionnaires. The purpose of these interviews was to understand each space, including why it was created, what about it was or was not working, and why they chose those design elements and environment for a collaborative space.

Insights

There were many goals of the existing collaborative spaces and of the users of those spaces. The common goals of the spaces were to provide opportunities, to serve the community, to accommodate requirements and needs, and to provide space to collaboratively work. Goals of people using the spaces were to give themselves motivation, and to collaborate. Design elements such as having options, openness, and meeting spaces were articulated as most important by high-end employees for their collaborative spaces.

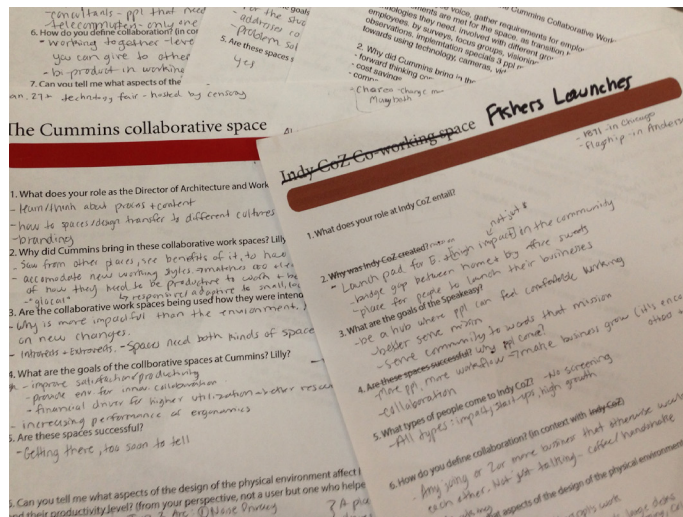
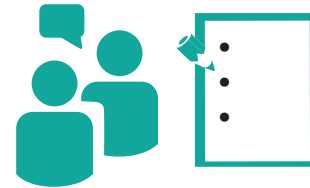


FIGURE 2.2.3.
Interviews completed from multiple existing collaborative spaces.



SURVEYS (WITH 5 WHYS)

Research

Surveys are less in-depth than interviews that “ask a series of targeted questions in order to ascertain particular characteristics and perceptions of potential users.”¹⁶ 5 Whys are “asking potential users “why” in response to 5 consecutive answers.”¹⁶ Again, going to co-working places, academic libraries, and collaborative spaces in the workplace, the design researcher asked questions about why they chose to come to that space, their goals in being there, and how the space allowed them to be collaborative. The 5 whys were added on to the question “why did you join/come to this space?”. Asking these questions allowed the design researcher to get an understanding, from the perspective of the users, of what the participants came for and how they use the space to accomplish that. The 5 whys force people to express the underlying issue. These methods are a quick way to receive answers from a large number of people.

Insights

The main purpose of the surveys was to understand why people were coming to work in those collaborative spaces. Users of the spaces said they joined or worked there because they wanted to be connected to people and current happenings, and it gave them a place to work with no distractions. What they wanted to get out of being at that establishment, or their goals, were to network, be in a creative and productive workplace, and have a platform for personal growth. Important elements that encouraged the users to collaborate were having events in the space, a free flowing set up for social interaction, that most people using the space had similar interests, and that those people knew the space was meant for collaboration.



REAL WORLD MEETINGS

Research

The design researcher was invited to attend a Workplace Exchange Forum, which included a presentation and Q&A meeting. Being involved in this meeting, the design researcher was able to see another collaborative space within a workplace, and collected real world issues and trends within.

The second meeting the design researcher was a part of was set up specifically to collect information for this project, as well as share knowledge with employees of the Indianapolis Public Library. The researcher gathered trends about the Indianapolis Public Libraries and learned about their current research projects.

Insights

In the meeting with collaborative workplaces (set up by Choreo and hosted by Rolls Royce), things like meeting spaces, hub spaces (a common area that includes food and drinks), flexibility, mobility, and inspiring were key elements that were talked about.

Meeting with a few librarians from the Indianapolis Public Library, the design researcher learned about specific trends of the Indianapolis Public Library system are lowering bookshelves to have a more open space, technologies are increasing (accessing information and books online, and people bringing laptops), attendance of children's programs are increasing, and there is a clash between generations of expectations for what libraries should be.

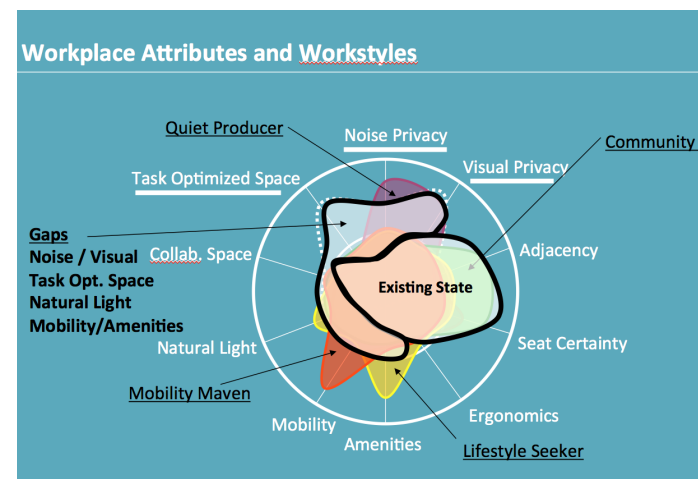
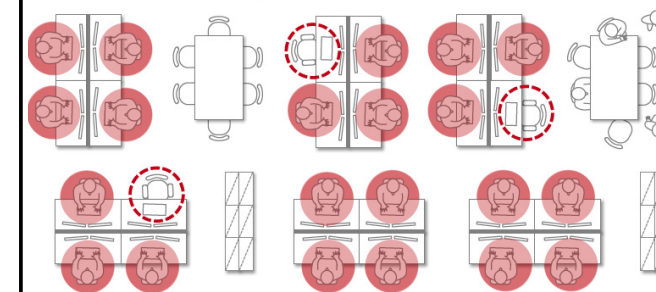


FIGURE 2.2.4.
Information received from the real world
meeting at the Workplace Exchange Forum.

What *could* utilization be?

When is it too high? How far should you have to go to find a seat? How important is it to be with the team? How flexible can you be when your first choice is unavailable?

If a co-visible area has 16 seats, may one or two should be free – which means **88% to 94%** would be utilized – at peak times.

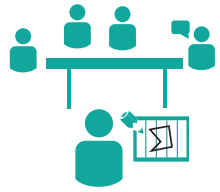


People’s Working Conditions

After some time analyzing the data already collected about existing collaborative spaces, the design researcher realized there were other types of data missing. She needed more information about how people work. This lead to understanding people’s working conditions, meaning current and ideal “conditions in which groups or individuals work, including but not limited to amenities, physical environment, noise level,” and their tasks or behaviors.⁹ In order to know what should go into new working spaces (the cospaces), it is important to look at their current working conditions and their ideal working conditions. Studying people’s existing working conditions allows the design researcher to see what does and does not work for them, while learning about ideal working conditions tells the design researcher what they want in a space, based off of their experiences. Types of information received when studying people’s working conditions were their goals in being there, why they came or joined that establishment, design elements, where they do currently work if they are not a part of an existing collaborative space, and why, and people’s behaviors, tasks, and interactions with others and objects.

The methods used to study people’s current working conditions were Activity Analysis Observation (with Social Network Mapping), and Draw the Experience. The online Questionnaire’s (with Free Listing) gave information about both people’s current and ideal working conditions. Lastly the Collages and Picture Stimulation/Card Sorting methods also asked potential users what their ideal working conditions are. The following describe each method, how it was used, and the insights that came from them.





ACTIVITY ANALYSIS OBSERVATION & SOCIAL NETWORK MAPPING

Research

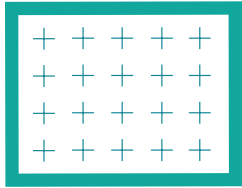
Both activity analysis observation and social network mapping are forms observation methods. Activity analysis observation is “a detailed list of all tasks, actions, objects, performers, and interactions involved in a process.”¹⁶ Social network mapping is “a mapping of different kinds of social relationships and their interactions.”¹⁶ Using these methods simultaneously for the same meeting, the design researcher sat in on and observed group meetings, to understand how groups work together, called planned collaboration. Pre-made materials made it easy to have a uniformed and consistent way of observing for each meeting. These methods are useful to understand relationship structures (with each other and objects) within working groups.

Insights

After observing groups working together, the biggest issue the design researcher saw was communicating. Almost every task in a group meeting is about sharing information with the other group members. Tools such as white-boards, laptops, and projectors were utilized to share information amongst each other. However, they have to be set up properly to work affectively. Having too large of tables or not appropriately places outlets may hinder the visibility of people to people and people to information.



FIGURE 2.2.5.
The Simplex Process created by Dr. Min Basadur.



DRAW THE EXPERIENCE

Research

Draw the experience is hands on for the participants and is “a visualization of an experience through drawings or diagrams.”¹⁶ The design researcher gave a gridded piece of paper, to help guide their drawing of their space. Because public cospaces will include a variety of types of people, the design researcher had different types of potential users participate in doing this method. The different types of people were students, business workers, people who work at coffee shops and co-working places. They were asked to draw how and where they currently work. This was a good way to reveal their experiences without having to observe in real time. The participants showed me their work environment, and interactions with others and their tools within their working space.

Insights

The data from this method came from students, business workers, people who work at coffee shops and co-working places. Those that work in collaborative spaces have a variety of mixed workspaces, whiteboards, and a lot of space. Those that do not work in collaborative spaces, currently have an individual room or space, which have limited seating and tables. Regardless of their current working space, everyone wanted enough seating and tables for work.



FIGURE 2.2.6.
The designer asking a potential user to draw his daily working experience.



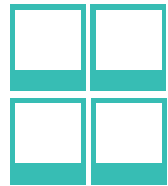
QUESTIONNAIRES (WITH FREE LISTING)

Research

The design researcher created questionnaire's to distribute online, because she could quickly reach a large amount of people and a wide audience. These questions were more specific to group work, or planned collaboration as defined for this project. The questionnaires were given out to a wide audience because everyone has worked in groups, whether it is work related, for school, or an independent reason (i.e. starting your own business or working in a short term project). To generate as many thoughts about what would allow for a productive work environment for collaboration, the designer added free listing to the bottom of the questionnaires. Free Listing is where you ask participants to list as many ideas as possible.

Insights

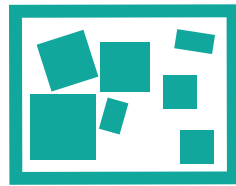
People who do not work in a collaborative space either work in some kind of public place, such as coffee shops and public libraries, or in a meeting room at their workplace. They mentioned they want to work in a place that has a lot of space. When asked what they would want in their ideal space to work collaboratively, the most common answers were flexibility, creative, comfortable, a well-lit space, with tools such as whiteboards, food and drinks, and technology tools (WI-Fi, computer, projector).



PICTURE STIMULATION/ CARD SORTING

Research

The next method used was an adapted combination of Picture Stimulation and Card Sorting. Picture Stimulation is giving participants pictures to stimulate their thinking in order to come up with their own thoughts or ideas. Card Sorting is having participants sort given pictures in a way that makes sense to them, usually in some kind of valued order. The design researcher gave potential users pictures of collaborative spaces and asked them to identify which spaces they would like to work in that allows for collaboration, with an explanation of why. The why told the design researcher about their preferred style of working conditions. Having people pinpoint specific things they would want or would not want, showed design elements that fit what their working style is. This method was a great way to show potential users not only what they may like but what they do not like in a collaborative space. Some people ordered the spaces they liked most to least.



COLLAGES

Research

The method of collages is another way to include the people's perspective in the research. Collages are created compositions made from a "provided set of images with explanations of the significance of the images and arrangement chosen."¹⁶ Again, the researcher interacted with multiple types of people such as students, business workers, people who work at coffee shops and co-working spaces. Gaining their perspective is important because they are the types of people that would use public cospaces. Participants were asked to create their ideal working environment for planned and unplanned collaboration. This illustrates their understanding in a high level conceptual way and helps them to verbalize complex or unimaginable ideas they may have. Since the design researcher is dealing with physical space, using images to help create what the environment could look like is helpful for both the participants as well as the designer. To make this process portable and less overwhelming, the designer included a set of pre-cut images for the participants to use.

PICTURE STIMULATION/CARD SORTING & COLLAGES

Insights

Data from picture stimulation and collages were analyzed together since they were both specific to people's ideal collaborative space, making both have very similar insights. Tools or resources like white-boards, technologies, and office supplies were mentioned a lot as a need to communicate. Other commonalities that emerged were move-able and comfortable furniture, and different space types. The space types include meeting spaces and space for social activity.

Research & Insights Recap

The design researcher employed a variety of methods, using a participatory design approach to collect data. The two areas studied were existing collaborative spaces and people's working conditions. It was important to gain perspective on current and ideal experiences of users or potential users. Current experiences about the space and the way they work told the design researcher what does or does not already work. Looking at the ideal gives users the opportunity to give their input on what they would want and need in a space for productive collaboration to take place, instead of the designer assuming and using other data from secondary research that may not directly apply to this project.

There were two types of collaboration the design research wanted to collect data about, planned and unplanned collaboration. Planned collaboration is pre-existing groups of people knowing that they are coming together to work on something. Unplanned collaboration is people having random encounters within the space. They do not come to the space planning to collaborate with specific people on a specific topic or task.

Different types of people were targeted during this research phase. It was important to reach a certain audience in order to get the correct information. These people included users and high-end employees of existing collaborative spaces, anyone who has worked in a group, and people who work in coffee shops or their homes or in other public places or in non-collaborative work settings.

Analysis was used to make sense of the data and turn it into information. First, each research method was analyzed separately to give the designer it's own insights. As the designer saw insights from each method, she started to see similarities within the insights. The types of information that came from the design methods were elements for collaborative work, goals of the space and of the users of the space. Once all the analysis was finished and insights emerged, the designer could see that the information starts to form into something. The next phase is figuring out how all this information fits together.

Elements for Collaborative Work

- Comfort
- Open
- Creative
- Different area Types
- A lot of workspace
- Variety of choices - adaptability

Goals

- Networking
- Collaboration
- A productive workplace
- A kick-start for personal growth

Process

After all the data has been analyzed from each method and taken apart, the next phase will be putting all those parts together. As you putt all the pieces together, you can start to abstractly see, what could be. This part of the process is called synthesis, as John Kolko puts it...

“Both Pierce and Johnson-Laird agree that abductive reasoning is related to insight and creative problem solving, and it is this creative problem solving that is at the heart of synthesis.”²⁰

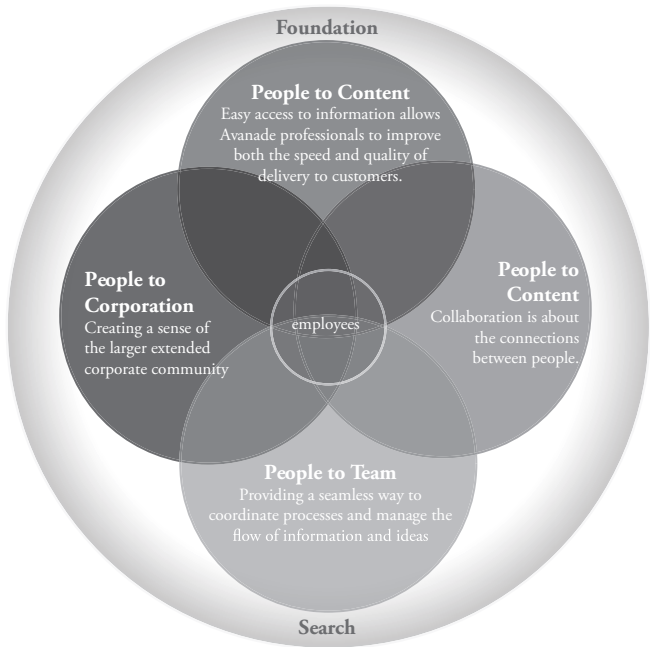
Secondary Research

Even though the participatory research done for this project was valuable, with the limited time frame and little credibility, the designer did secondary research to make her work more credible. Secondary research is the “review of published articles, papers, and other pertinent documents to develop an informed point of view on the design issue.”¹⁶ The data found during secondary researched helped the designer synthesize and understand what the work she has done could be.

Three great sources were utilized and included into her frameworks. The first source, Make Space: How to Set the Stage for Creative Collaboration by Scott Doorley and Scott Witthoft, has a template that breaks down the needs and opportunities to create a space for collaboration. The information in this template reinforces what the design researcher found using participatory design, because much of it had similar meaning. Some of the ideas within Make Space that supported the designers information found from her primary research were multiple place types, open space, the ability to transform the environment by mobile tools like white-boards and seating, and flexibility.¹²

This template has one section called Properties, which the designer is directly including in her framework. “These properties are spatial characteristics that can be used to transform behavior, and can be calibrated from open to closed. For all properties, both ends of the spectrum should be included into the collaborative space. Changing these properties can alter the nature of an interaction.”¹² These properties are: Posture - the physical positioning of people and the types of behaviors that position can draw out, Orientation - the positioning of people and assets relative to each other, Surface - the orientation of work surfaces within a space, Ambiance - the atmospheric qualities of an environment and its effect of people’s mood, Density - the size of a space relative to the activities and assets within it, Storage - the status of inactive objects.¹²

FIGURE 2.3.1.
The framework for productive collaboration
in businesses created from Avanade



In doing secondary research, the designer found a framework for productive collaboration. This framework helped define and evaluate the meaning of having a space for more productive collaboration, as well as setting the stage for creating a framework. Avanade created the Avanade Fabric, a vision of collaboration designed to foster productive connections between Avanade employees and the information they need to meet customer needs. The Avanade Fabric framework is business-based, however it has many of the same needs and qualities that public cospaces should poses. The four main collaborative principles this framework is built around are: People to People - collaboration is about the connections and networking between people, People to Content - easy access to information allows people to improve both the speed and quality of delivery, People to Team - providing a seamless way to coordinate processes and manage the flow of information and ideas; spaces are now core, People to Corporation - creating a sense of the larger extended corporate community.²⁴ These four principles of were modified for public cospaces, instead of for a business, and then set the foundation for the designer’s framework SEE FIGURE 2.3.1.

Designer's initial synthesized principles

PEOPLE	Networking and understanding creates connections, creating collaboration.
EVENTS/ PROGRAMS	Holding events or programs brings together more people creating a sense of community. Creating a sense of the larger extended community. "better the community"
CREATIVE & INSIRING	Stimulates thinking and relieves stress or concentration.
ACCESSIBLE	<ul style="list-style-type: none">• Easy access to sharing of information and ideas, improves speed & quality of delivery & understanding.• Communicate content to others.
FLEXIBLE & PERSONAL	Everyone wants/needs something different, based on thier tasks and preferred working styles.

Commons 2.0 principles

OPEN	Exchange of ideas. Encourage social interaction, and coming together of multiple disciplines.
FREE	Flexibility and mobility of workstations
COMFORTABLE	Fits many types of people. Tables and chairs facilitate collaboration; different seating types.
INSPIRING	Inspires users to be creative (furnishings, layout, design, artwork)
PRACTICAL	A place whrer work can be done. Offers practice services and features.

FIGURE 2.3.2.
A synthesis of the Commons 2.0 principles
and the designers initial synthesized
principles from her primary research.

My synthesized principles

Flexible A place that allows the users to customize, adjust, and have mobility within the space to fit their wants and needs.	Practical A place where work can be done, which offers practical services and features that allows easy access to sharing ideas, knowledge, and skills.	Inspiring A place that stimulates thinking that give users the opportunity to be creative	Open A place that facilitates the exchange of ideas between people, social interaction.
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The last resource that was highly useful was Commons 2.0: Library Spaces Designed for Collaborative Learning, by Bryan Sinclair. This article articulated five guiding principles that the Commons 2.0 adheres to. Again, the Commons 2.0 is an extension of the information commons that academic libraries are already adopting. The Commons 2.0 emphasizes co-learning and co-construction of knowledge. The five principles are Open, Free, Comfortable, Inspiring, and Practical.³⁰ The designer took these guiding principles and synthesized them with the data collected and the other secondary research, to come up with the four principles of public cospaces SEE FIGURE 2.3.2.

“Prototypes are representations of a design made before final artifacts exist. They are created to inform both design process and design decisions.” IDEO

In the Commons 2.0, Open refers to an unconfined nature of space where “a cross disciplinary exchange of ideas happen, that encourages the coming together of disciplines that are typically isolated from one another.” Free is focusing on flexibility and mobility, while weeding out the fixed workstations. The principle comfortable suggests a space “designed for many types of learners and learning styles, not just one. The tables and chairs facilitate collaboration, but there are different types of seating spaces as well.” Inspiring means that “the furnishings, layout, and design should present a uniform and consistent vision of functionality, sophistication, and creativity. It should feel dynamic, with artwork that inspires users to tap into their own creative impulses.” The last principle, practical, is “a place where real work can be done and real learning can take place, considering sound pedagogical principals. It offers practical services and features.”³⁰

Models and Prototypes

To synthesize and create abstract ideas, the designer used models and prototypes. She took all the pieces of information from analysis, and included the secondary research, then intentionally placed that information to form models. The many iterations of models created during this phase represent “what could be”, and acted as prototypes of the final conceptual framework. A conceptual framework is an interconnected set of ideas about how a particular phenomenon is related to its parts; serves as the basis for understanding the correlational patterns of interconnections across events, ideas, observations, concepts, knowledge, interpretations and other components of experience.³² Prototyping is often used as a testing method, however for this project prototyping was used to help synthesize. Models come in many forms like diagrams, maps, charts, or matrices. To see all the methods in depth, refer to the Synthesis and Prototyping Content section.

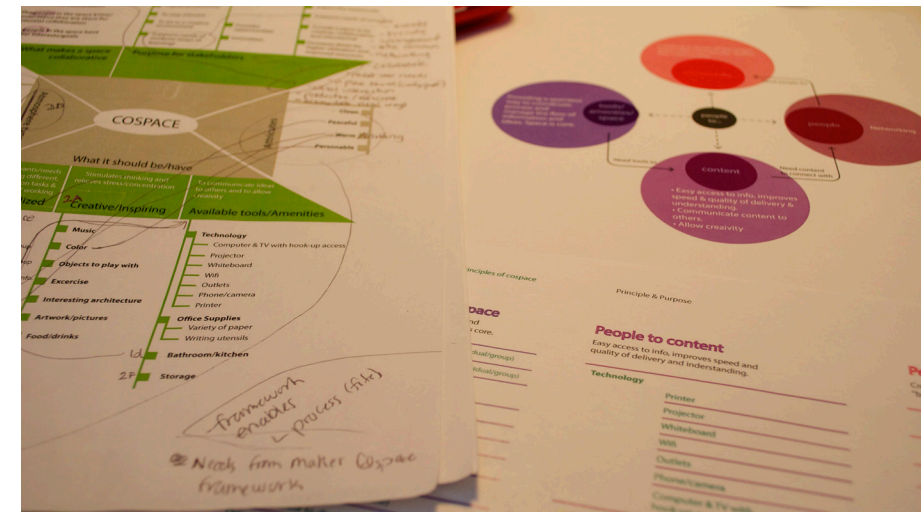


FIGURE 2.3.3.
Pictures of the models created by the designer that represent the data collected.

Content

Framework Iterations

Making prototype iterations of the framework not only helped with the synthesis of the information, but also to work on form. In models, form and content work together to give it meaning. The foundation of the framework started with Community, People, Communication, and Tools/ Amenities/Space SEE FIGURE 2.3.4. All of the information within this iteration became parts of the final conceptual framework.

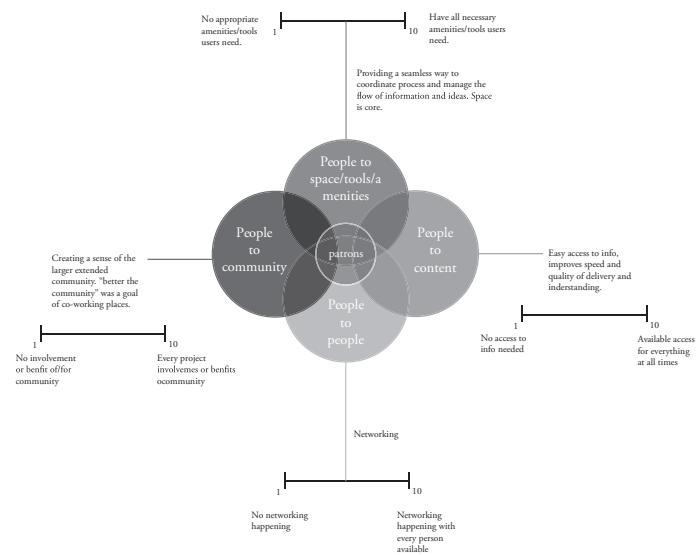


FIGURE 2.3.4.
The designers adapted framework from Avanae, that defines productive collaboration.

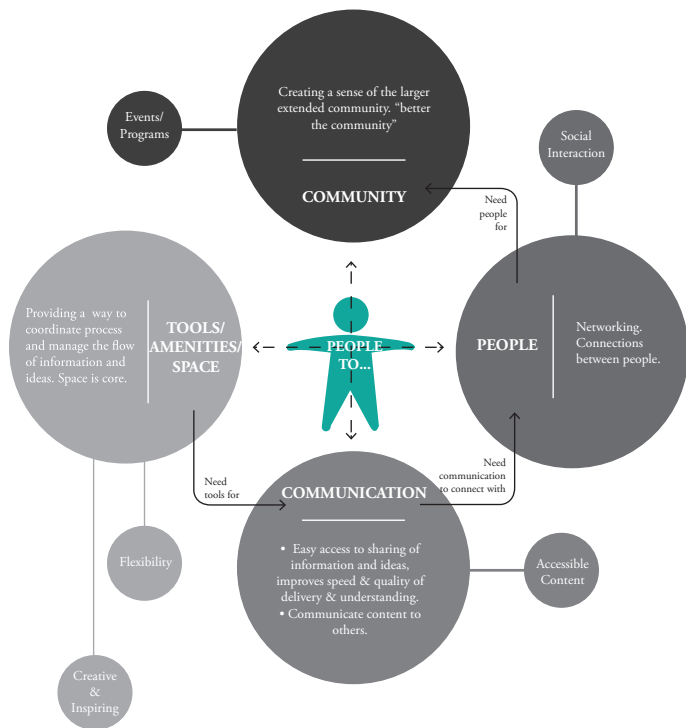


FIGURE 2.3.5.
A synthesis of the adapted framework for productive collaboration and the rest of the primary research data.

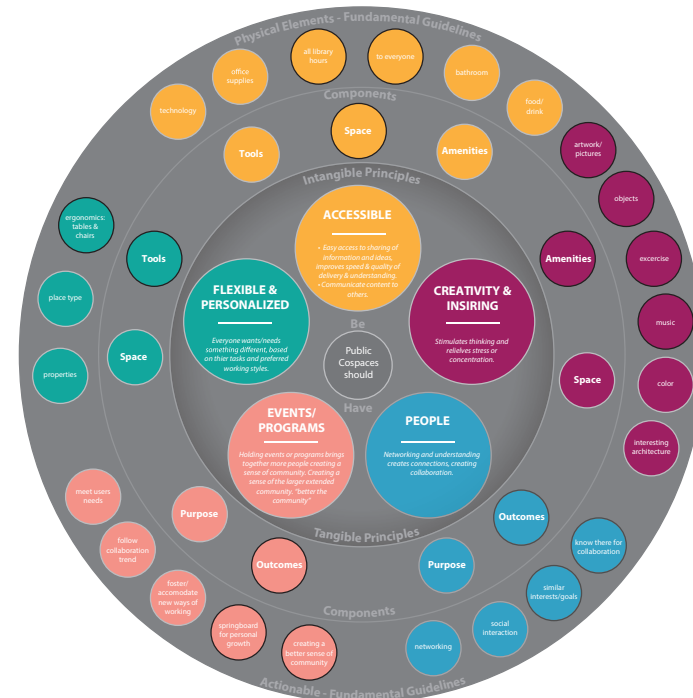
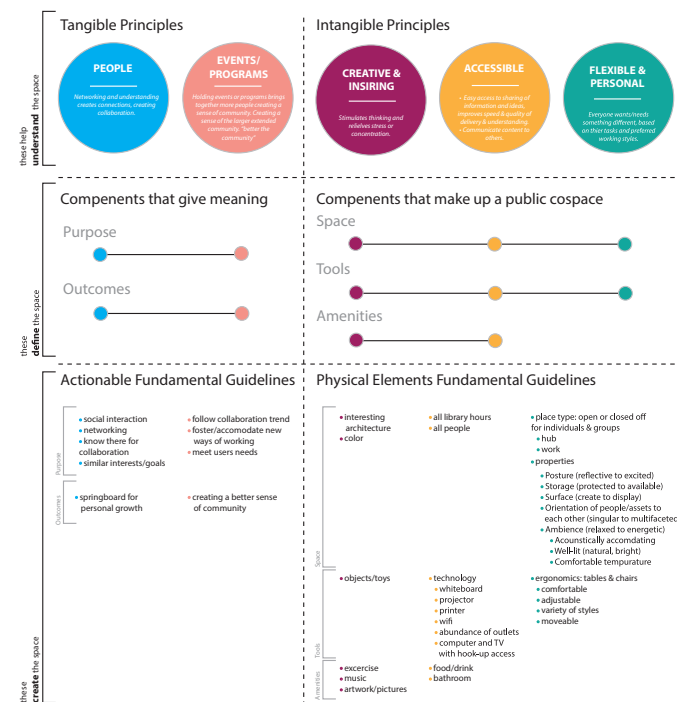


FIGURE 2.3.6.
Both models are iterations of frameworks leading up to the final conceptual framework. With each iteration, form and content change.



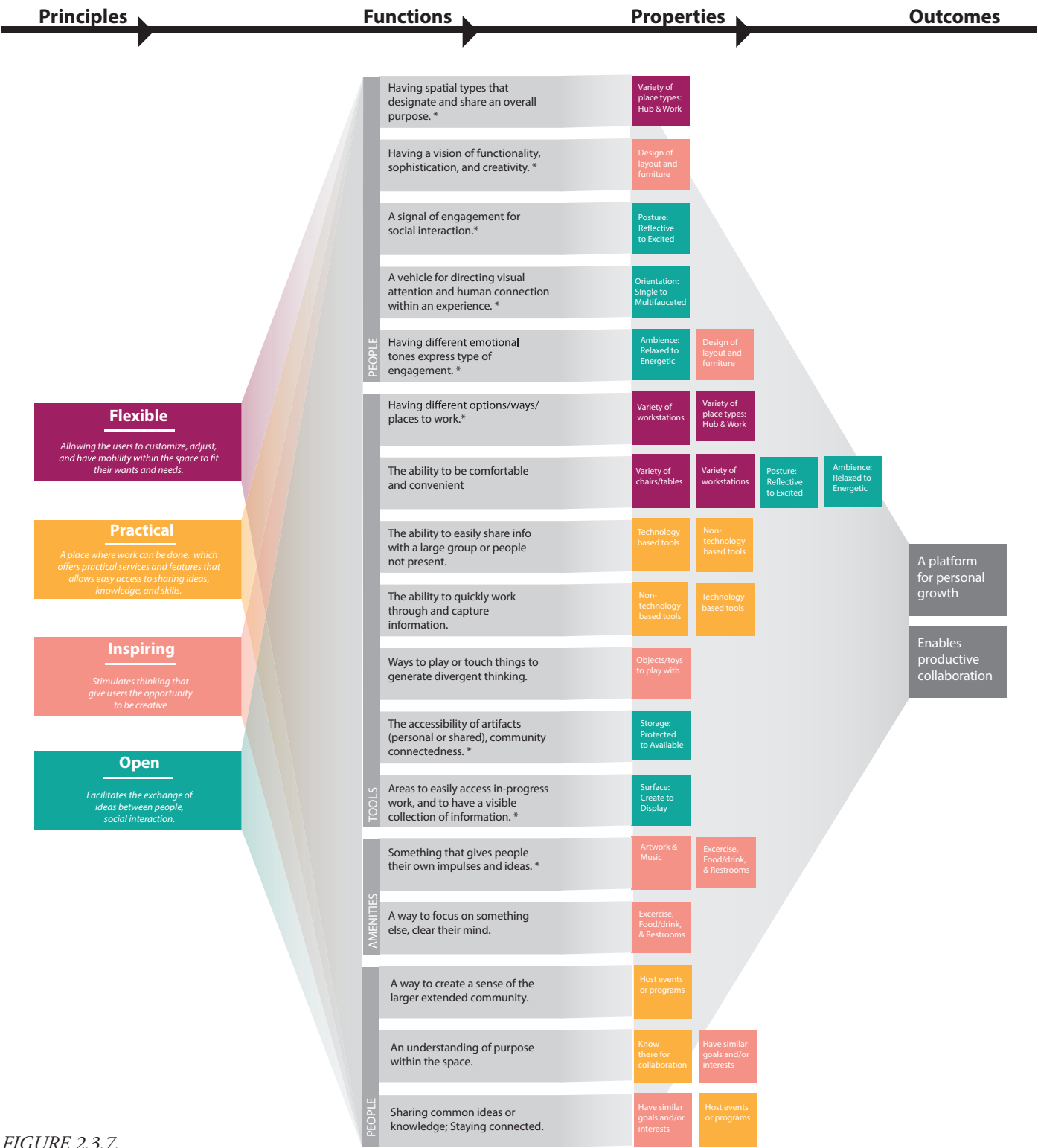


FIGURE 2.3.7.
This iteration of the framework shows the flow between each element of the framework, the principles, functions, properties, and outcomes.

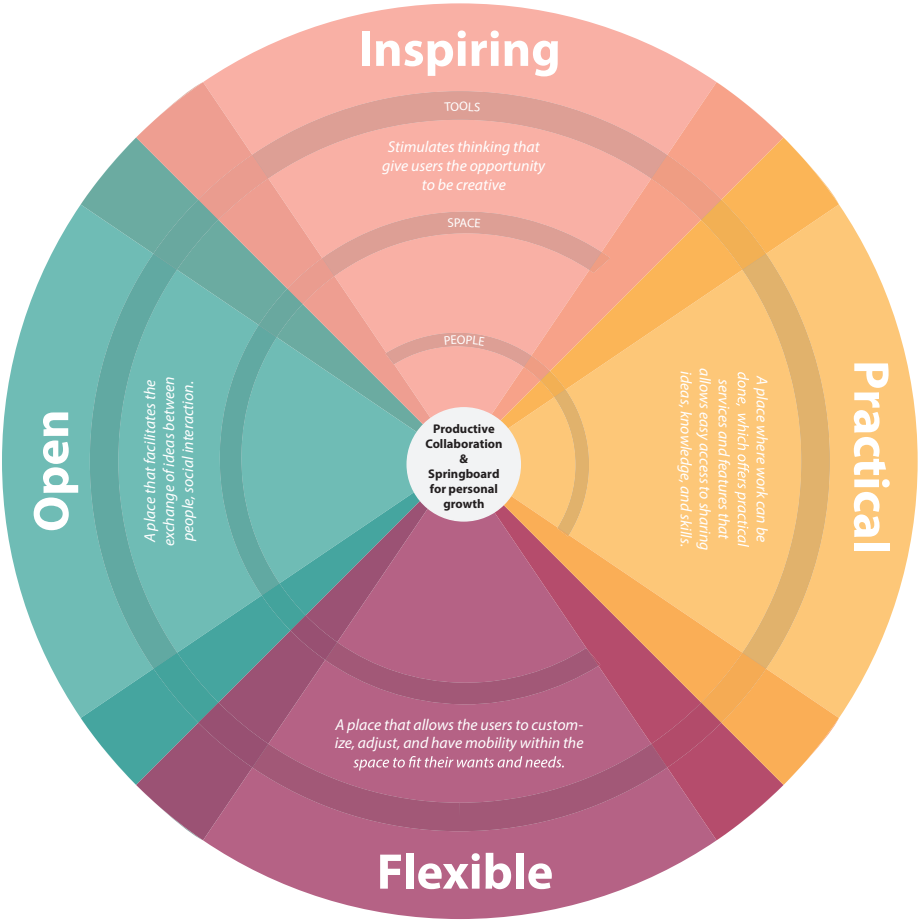


FIGURE 2.3.8.
One of the last iterations that better incorporates all the elements.

Scenario

Other prototypes, besides models of the conceptual framework, were also helpful in synthesizing. Prototypes were created to visual a physical collaborative space. The elements from the framework were incorporated into these prototypes. Scenarios “illustrate a character-rich story line describing the context of use. It is especially useful for a product or service. This can help communicate and test the essence of a design idea within its probable context of use,”¹⁶ however in this case scenarios were used to evaluate the experience concept. The designer wrote a scenario using the synthesized information, and the potential users from the participatory design approach as characters in the scenario. The scenario communicates what kind of people could use this space and their experiences the space.

Bob is working on a month long project, with 3 other people. They don't want to work from their homes or in a coffee shop because there are too many distractions, not enough space, and not the right tools to help them share their ideas. They aren't allowed to work in their offices for non-work related things. Bob hears about their cities new addition to their public library, a cospace. So, Bob and his team decide to go to the cospace in the library because it is a place to work that has enough space and tools, they have access, there are limited distractions, and they heard that this cospace is about collaborating. So it might be helpful to go and see what other people are working on.

The first time there, Bob is there by himself. He sees some open area seats to work while he waits for the rest of his team to show up. While he is casually working, he comes across a lady who is working on creating her own company and happens to need a few people to be in a focus group. They start talking and are interested in each other's work because they see they could be helpful to one another's projects.

To get a better understanding of next steps, they plan to meet there again in a couple days. This time Bob and his team and Cassie, meet at a round table, in a more private area, that has a projector that connects to their laptop and views onto a white-board. Now they are able to interact and communicate with each other.

After working in the space for a little while, Bob, his team, and Cassie come to a point where they are feeling stuck. So they decide to take a break and go to the hub area to stretch their legs, mingle, and get a drink. This helps them relieve their concentration then allows them to re-stimulate their thinking, so they can go back to work.

Paper Prototype

This scenario helped guide the designer create a paper prototype of the space, including elements from the framework like different place types, layout that emphasizes collaboration, a variety of workstations, to smaller details like showing color and light are important. Paper Prototyping is a “rapid sketch, layout, and evaluate interaction design concepts for basic usability. This is a good way to quickly organize, articulate, and visual interaction design concepts.”¹⁶

SketchUp Map

Next, the designer used Google SketchUp, a computer based program, to create a higher-level prototype of what a public cospace could look like SEE FIGURE 2.3.9. The designer used the paper prototypes as a guide for the sketch-ups. The final sketch-up prototype was used to create a final map of a public cospace that incorporates all the elements from the conceptual framework.



FIGURE 2.3.9.
A Google SketchUp prototype created as a
mock up of the final cospace map.

Sub-questions

1. How might participatory design be used to help understand the goals of existing collaborative spaces?

Studying the purpose of going to those existing collaborative spaces (from the perspective of the users) and the purpose of creating those existing collaborative spaces (from the perspective of high end employees like owners or directors) allowed the design researcher to understand the goals.

Using a participatory design approach is important in finding out what the goals are because going into the spaces and actually talking to the direct source (the people), allows for the most accurate and direct information. Having the users participate in the research and the designer going into their spaces to see everything in action, gave the designer a holistic idea of the goals.

In using participatory design, the methods of Interviews, and Surveys with 5 whys were used to learn about the goals. The types of questions asked to get to this understanding were “Why was this establishment created?”, “What are the goals of this establishment?”, “Why do you think is important to get people out of working in their homes, coffee shops, small office suites, etc.?” , “Are these collaborative spaces successful and being used for what they were intended for?”, “How does your space differ from the other collaborative spaces in Indianapolis?”, “ Why did you join/ come to this establishment?” - and asking why 5 times to each of their answers for this question, and “What are your goals in being here at this establishment?”.

Some of these questions were asked to the users, some the high-end employees, and some to both. From the above questions, the designer was able to understanding individual goals of the people as well as the overarching goals of the collaborative spaces, rather than reading or assuming what the goals might be.

2. Why might the goals of existing collaborative spaces be transferable to public cospaces?

In learning about goals of existing collaborative spaces, the designer had to determine if and which goals could be transferred to public cospaces. It wasn’t until analyzing the data, she realized why the goals were transferable to public cospaces.

They can be transferable because there will be the same types of people coming to public cospaces as the already existing cospaces. Public cospaces will be a mixture of the type of people in all the existing collaborative spaces, therefor each of their goals make sense as goals of public cospaces. Since there will be the same types of people, there will also be the same types of interactions and behaviors. For example, there will be planned and unplanned social interactions like people meeting in groups using the same types of tools such as white-boards and projectors, and individuals creating spontaneous encounters for networking.

Below are full lists of goals the design researcher discovered. They became synthesized, with the rest of the data, and became part of the framework.

Goals for public cospaces:	Goals for users of public cospaces:
<ul style="list-style-type: none">• Grow Indiana Start-ups• Impact the community• Support the needs of community• Providing a place to be creative, collaborative and educational• Increases higher utilization and improved resources. i.e. time, money• Innovation• Provides opportunities	<ul style="list-style-type: none">• Networking• To collaborate• Higher productivity• To stay relevant• To be in a creative environment• Support the needs of users• Innovation• Provides opportunities

3. How might understanding people’s working conditions determine what factors are needed in a space for productive collaboration to take place?

To understand people’s working conditions, the designer had to analyze and synthesize the data collected in order to know what it means. In understanding the data, specifically people’s working conditions, it can be determined what factors are needed in a space for productive collaboration to take place. Learning how people already work and how they want to work, tells me what to bring into public cospaces.

Understanding people’s working conditions is vital in determining what factors are needed in a space for productive collaboration because it allowed me to see what does and does not already work in their working conditions, and what they might want in their working conditions.

Examples of factors:

The designer found that the people already working in a collaborative space like the openness for their individual work, but still like a closed off area when they are working in groups. People who are not already working in a collaborative space tend to work in places that have many distractions, so simply having a space to work without those distractions gives them more productivity. In both people working in existing collaborative spaces and those who are not, people always want enough space to spread out their work, they want it to be fairly quiet with some background noise, they want tools to communicate with each other, comfortable seating, etc.

The final synthesis creates what factors are important for productive collaboration to take place. The principles, functions, and properties are the factors that enable productive collaboration and make up the framework. See the final framework to understand all the factors involved SEE FIGURE 2.4.3. The designer used the a previous framework iteration for defining productive collaboration SEE FIGURE 2.3.4. as a basis for what factors could be included, and to organize the collected data.

Methods used to understand people’s working conditions:

- Draw the Experience (showed me their work environment and interactions within their working space)
- Activity Analysis with Social Network Mapping (showed me their tasks, actions, objects used, and their interactions within real time)
- Collage (showed me their ideal working space)
- Picture stimulation/Card Sorting (showed me what they do and do not like in a working space)

4. How might a conceptual framework be used to help initiate the implementation of public cospaces?

The framework reflects what potential users of public cospaces would want or need in that space to have productive collaboration. The framework provides stakeholders with not only what the space could look like and what should be included in it, but also what its purpose is, again from the perspectives of potential users and the people who help run and put together the already existing collaborative spaces. Combine this information from the framework, with the justification from outside sources, shows the necessity of developing public cospaces.

To better understand the framework and how it can be looked at to help develop public cospaces, a high level process is integrated into the framework. The process is an enabling feature that allows the stakeholder to better correlate the framework with the actual development of the space. Even though the framework alone would still serve a purpose of showing what is useful in the space and why, without offering a process of application, the framework alone simply does not enable the development of public cospaces.

To create a high level process, first the designer looked at the processes that were already familiar to her. The two processes she knew best were the two used in this thesis project, the Simplex process and the CASPI model. SEE FIGURES 2.1.1. and 2.1.2. From these processes, the designer found what similarities there were between them and what would be useful for creating a process to implement public cospaces. A synthesis occurred to create a detailed process for implementing public cospaces SEE FIGURE 2.4.1. Then, it was condensed to a higher-level process in order to help implement the framework, rather than implementing public cospaces SEE FIGURE 2.4.2.

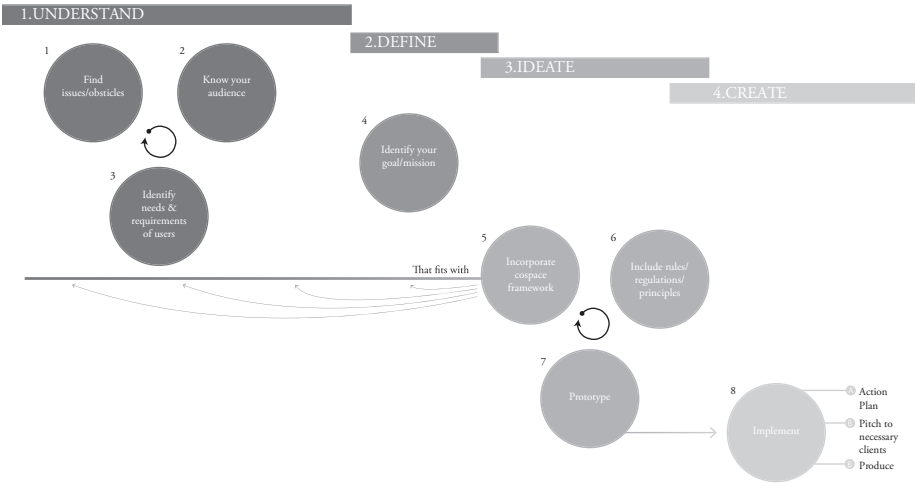
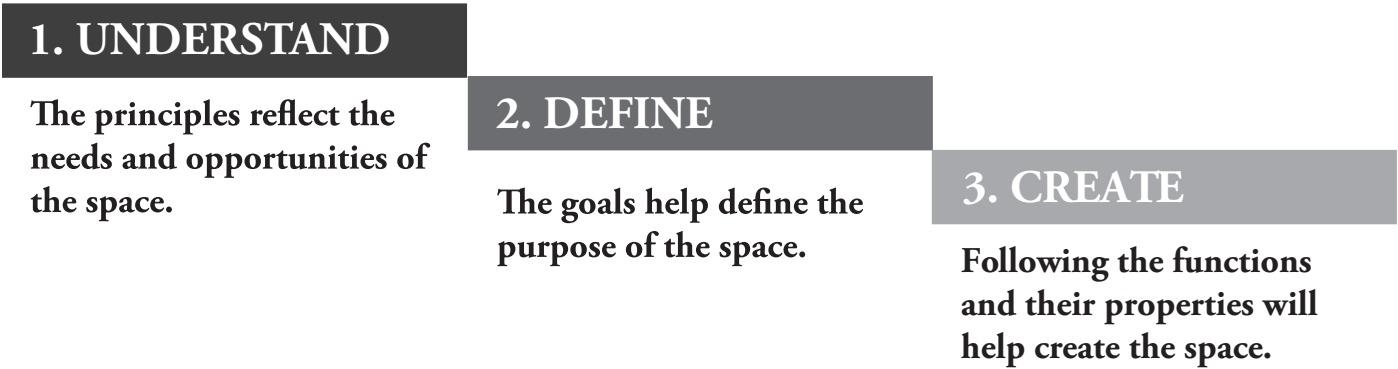


FIGURE 2.4.1.
A synthesized process to develop cospaces.

There are three steps of the process: understand, define, and create. These steps are aligned with the aspects of the framework. First, the four principles help understand the space. The first step in developing something is to understand the needs and opportunities of the space. The four principles reflect the needs and opportunities of the space. The second step to implement this framework is to define the goals or purpose. The general goals of a public collaborative space are to enable productive collaboration, and to provide a platform for personal growth. However, each public library will also have their personal goals as well. The last step is to create the space. Following the functions and their properties will help create the space. This last step of creating the space is the most detailed and hands on part of developing a public cospace.

FIGURE 2.4.2.
A high-level process that was integrated into the final conceptual framework, to help develop that framework.



Research Question

How might understanding people’s working conditions and existing collaborative spaces inform a conceptual framework to enable the development of public cospaces?

All the data collected from studying people’s working conditions and existing collaborative spaces was analyzed then synthesized in order to determine what the goals of a public cospace could be, and what design elements would best enable productive collaboration. People often work in groups, however, it is usually not productive collaboration and the environment in which they are working is not as conducive as could be for collaboration, such as coffee shops.

After compiling all the primary and secondary research data, a conceptual framework was created as the final result. Within this conceptual framework, there are three main parts: Principles, Functions, and Properties. Principles are the overarching, high-level guidelines. All four principles must be incorporated into a public collaborative space to allow for productive collaboration. Functions are what take place in the space, while properties are ways to allow that function to happen. Every function has a main property, as well as secondary properties that also fit that function. There are three property types: tools, space, and people, which fall under each principle. Tools are the useful things that fill up a space like furniture, storage options, materials, etc.¹² Space is the three-dimensional environment, in which objects and events occur and in which they have relative position and direction. Physical space is structured according to uses and needs for interaction.¹⁴ People represent the users of the cospace. Knowing the goals or purpose for creating public cospaces is important. The goals of public cospaces are to enable productive collaboration and to provide a platform for personal growth. The combination of Principles, Functions, and Properties will allow those two goals to happen. As mentioned earlier, each public library will have their own goals in addition to these high level goals. Below are the principles in detail with a couple examples of their properties and functions. To see every property and function for each principle, check out the conceptual framework SEE FIGURE 2.4.4.

The four principles are Inspiring, Practical, Flexible, and Open. Inspiring means a place that stimulates thinking that give users the opportunity to be creative. Within inspiring, there are all three property types of tools, space, and people. Some examples of tools are artwork and objects to play with. A space property is ambiance with its function as intangible features of the environment that elicit emotional responses. The people property is to have similar goals and/or interests. The designer found that is something many people in existing collaborative spaces found to be a big factor in collaboration.

Practical means a place where work can be done, which offers practical services and features that allows easy access to sharing ideas, knowledge, and skills. Practical has two of the three property types, tools and people. The tool properties are technology and non-technology based tools. This has to do with communication. While studying people’s working conditions and existing collaborative spaces, in order to share ideas and knowledge, there has to be tools that allow for that to happen. “Communication is essential in buoying the remarkable power of multiple perspectives.”¹² Another important quality that made up the people property in this practical principle is that the space should host events or programs. Many users who participated in the research said going to events or programs that space offered was a way to network and collaborate among people that may not ordinarily do.

Flexible means a place that allows the users to customize, adjust, and have mobility within the space to fit their wants and needs. Tools and space properties fall into the flexible principle. The main properties within tools are to have a variety of chairs and tables and a variety of workstations. Everyone should have different options to work, because everyone has different working styles. Where and how people work also depends on their task. Similarly with the space property, there should be multiple place types: a hub place and work place. Each place type has their own purpose, for planned and unplanned collaboration.

Open means a place that facilitates the exchange of ideas between people, social interaction. Within the open principle, there are tools and space properties. One tool is to have a surfaces space, to create and display, this gives people the ability to easily access in-progress work, and have a visible collection of information. A space property is posture – reflective to excited, with its function of a signal of engagement for social interaction.

In addition to the framework, a two dimensional visual representation of a public cospace was created. This 2D representation or map, incorporates elements from the framework and applies them to a space in which people can better relate to and understand. The map shows many tools and space properties such as variety of workstations, objects to play with, non-technology related tools, food and drinks, and surface areas
SEE FIGURE 2.4.5.

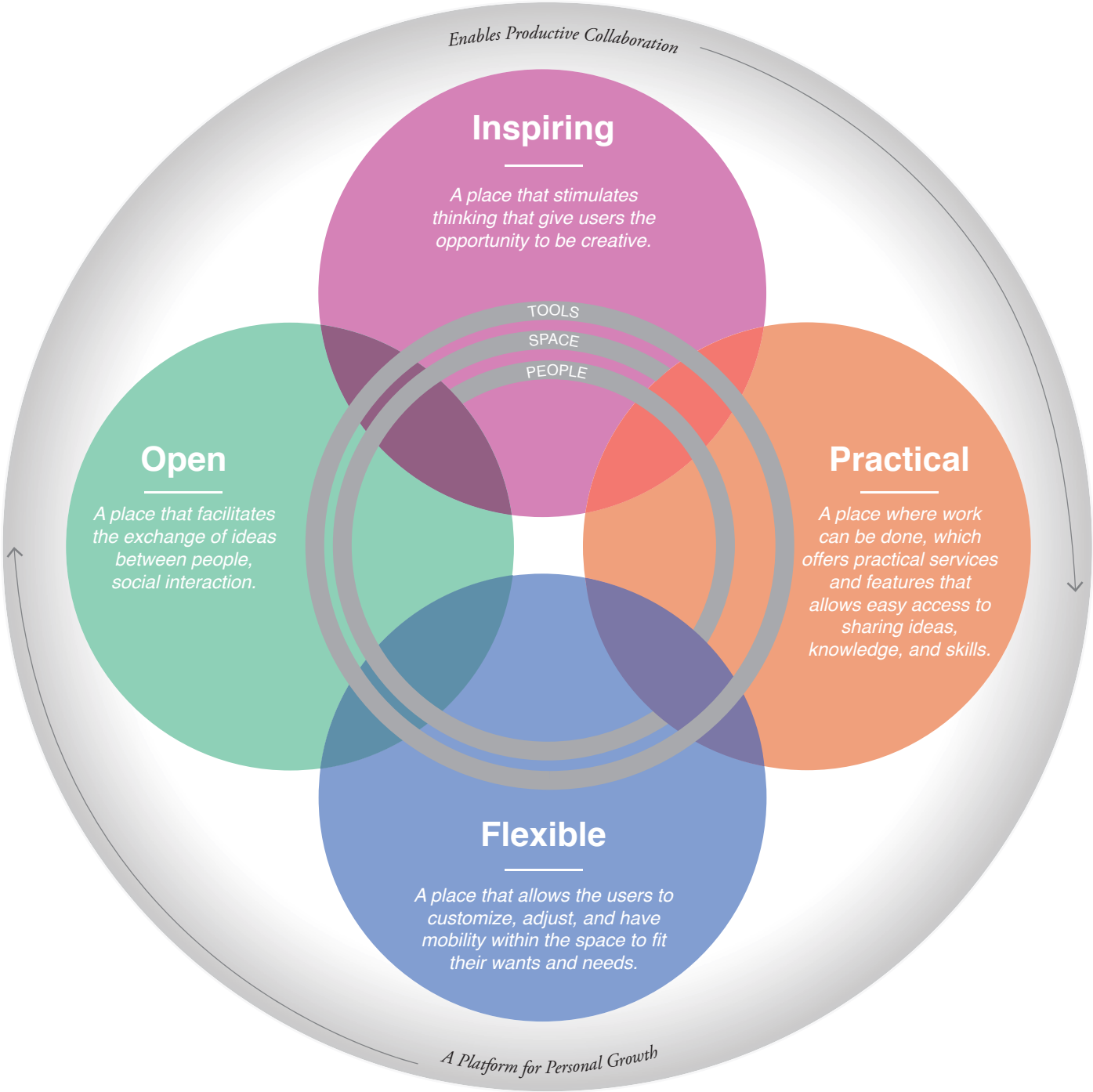


FIGURE 2.4.3.
The final conceptual framework. This shows how the principles, property types (tools, space, and people), and goals are related, specifically emphasizing the principles.

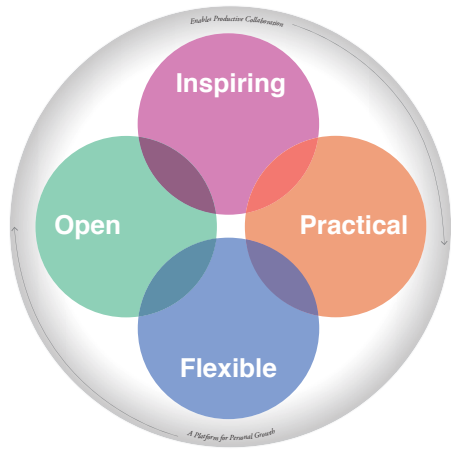
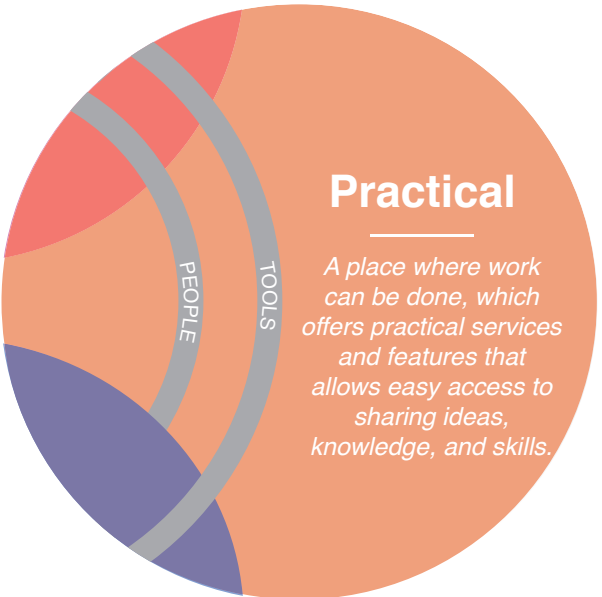
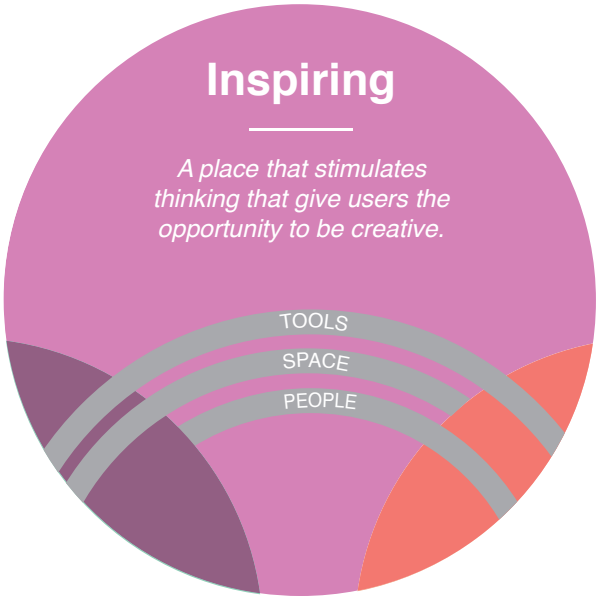
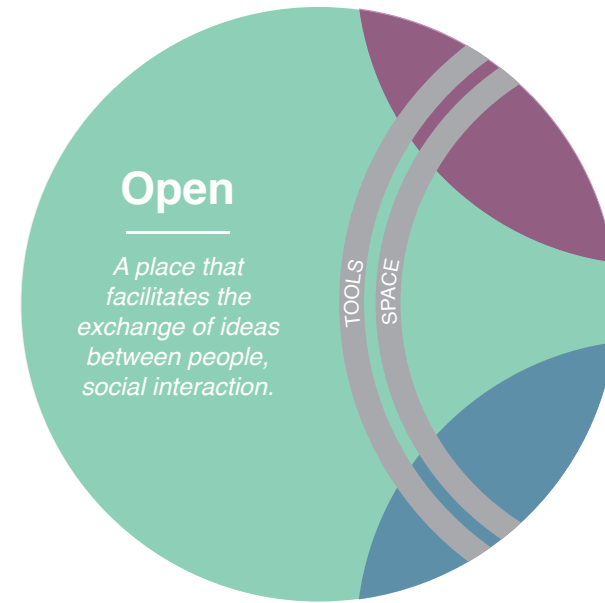
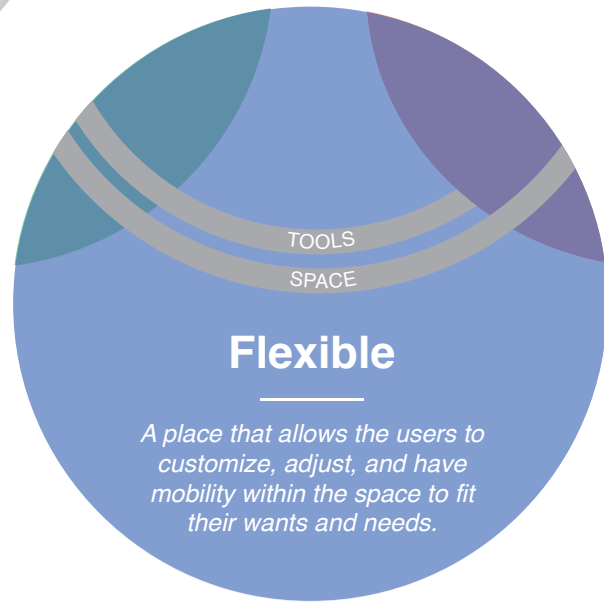
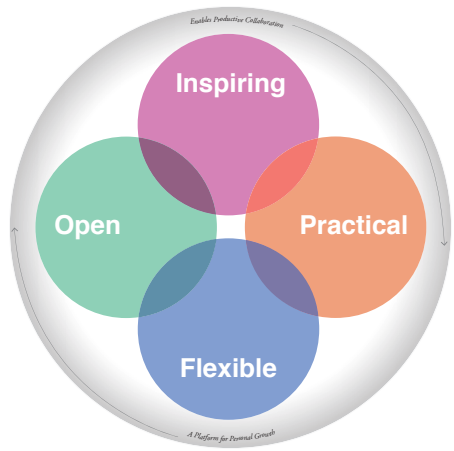


FIGURE 2.4.4.
This part of the framework shows each principle in detail, emphasizing the functions and properties.



Functions		Properties		
TOOLS	Ways to generate divergent thinking, and allow people to come up with their own ideas. ³⁰	Objects/toys to play with	Artwork	Exercise, Food/drink, & Restrooms
	A vision of a creative, yet functional space. ³⁰	Design of furniture	Orientation: Single to Multifaceted ¹²	
SPACE	Intangible features of the environment that elicit emotional responses. ¹²	Ambiance: Relaxed to Energetic ¹²		
PEOPLE	Sharing common ideas or knowledge; Staying connected.	Have similar goals and/or interests	Host events or programs	

Functions		Properties	
TOOLS	The ability to easily share info with a large group of people.	Technology based tools	Non-technology based tools
	The ability to quickly work through and capture information.	Non-technology based tools	Technology based tools
PEOPLE	An understanding of purpose within the space.	Know there for collaboration	Have similar goals and/or interests
	A way to create a sense of the larger extended community.	Host events or programs	



Functions → **Properties**

TOOLS	The ability to maximize productivity by comfort and convenience.	Variety of chairs/tables	Variety of workstations ¹²	Posture: Reflective to Excited ¹²
	Having different options and places to work. ¹²	Variety of workstations ¹²	Variety of place types: Hub & Work ¹²	Non-technology based tools Technology based tools
SPACE	Having spatial types that designate and share an overall purpose. ¹²	Variety of place types: Hub & Work ¹²		

Functions → **Properties**

TOOLS	The accessibility of artifacts (personal or shared). ¹²	Storage: Protected to Available ¹²
	The ability to easily access in-progress work, and have a visible collection of information. ¹²	Surface: Create to Display ¹²
SPACE	A signal of engagement for social interaction. ¹²	Posture: Reflective to Excited ¹²
	A vehicle for directing the relative positioning of people and assets. ¹²	Orientation: Single to Multifaceted ¹²

3 Conclusion

3.1 Future Implications

3.2 Bibliography

3.3 Cited Notation

3.4 Appendix

Literature Review

Acknowledgments

3.1 Future Implications

This document is useful for more than just the content or results. This project was also about how to use a process to get to an end goal, in this case the end goal being transforming physical space. Within this process, a participatory design approach was used, specifically in the beginning during the collection phase. It emphasizes that including specific participants, as the main source of research is important. For future studies, this project can be a reference for decisions when faced with similar projects; decisions like appropriately selecting and using participatory design methods within each step of the process.

The purpose of creating this conceptual framework was to become a guide to develop collaborative spaces within public libraries. This framework could be taken, given to public libraries to assist their decision, research, and implementing of collaborative spaces.

Further studies may be done on individual pieces of the framework. For example, color is an asset in making the space inspiring. But why; and what colors will inspire what type of work, within public libraries? There have been many studies done on the effects of color, which could be looked at and integrated into this work. Another example, what kind of artwork would be inspiring to library patrons using the collaborative space? Something that is inspiring to person A, may not be inspiring to person B. In the primary research phase using participatory design, many people mentioned they wanted objects to play with or even just to touch while they are working. The designer was able to draw out from them the reasoning for this, which was to stimulate their thinking. However they did not know why. Few studies have been done on this topic. Expanding research on this topic could help bring a more concrete reasoning as we all objects to spaces where people work. Knowing more in-depth information about some of the properties within the framework, could raise the level of productive collaboration.

It has already been established that public libraries serve as a meeting place, and for many different types of meetings. Based on the observations from a previous study, Aabo and Audunson suggest that meetings in the public library primarily consist of strengthening the bonds and social interactions between already existing groups, rather than creating new bonds between unacquainted people.⁶ There are key elements from the designers conceptual framework that enable productive collaboration like orienting furniture towards each other, and the people in the space have to know they are there for collaboration. However, from these observations, there still needs further studies on how to better enable unplanned collaboration, or random encounters.

With new changes of libraries becoming a place for collaboration and social interaction, leads to the question, what will the role of librarians become? Will they become obsolete? The designer believes librarians will face becoming a form of facilitators. Even though the focus of this project does not require facilitators, sometimes collaboration does happen with facilitators, especially professional facilitators. Professional facilitators can take a group of people through a process to accomplish a goal. There may be other roles of librarians as well. This is a topic that needs further research and practice.

Once a public cospace is created and put into use, it would be beneficial for studies and research to take place to find out how library users make use of the new collaborative library space. Without continuous research, it will be hard to adapt the new space to accommodate the users.

“Throughout the design and implementation of new solutions, it is important to keep learning. With Human-Centered Design, design and evaluation are a seamless process, since both require attention to the effects of solutions on the lives of people.” IDEO

Working in collaborative spaces is a new concept most people are not familiar with. If they do not utilize it how it was intended, it is important to figure out why and how that can be resolved to allow the space to live up to its fullest potential of enabling productive collaboration.

Intentionally, this project did not include considering virtual collaborative spaces because the focus was about how a physical environment can enable productive collaboration. For further implications of physical environments used for productive collaboration, virtual collaborative spaces and technologies can certainly be a factor and something to consider. Within physical environment collaborative spaces, the designer did find that the use of technologies like smart boards, laptops or iPads, and projectors are really important in communicating information and ideas. How can we take it to the next level and use and integrate virtual collaborative tools like Google docs, Skype, and Dropbox.

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Appendix A

Literature Review

Aabo, Avanhild, and Ragnar Audunson. *“Use of Library Space and the Library as Place.”* Science Direct. Library & Information Science Research, 17 Feb. 2012. Web. 28 Mar. 2013.

For this project, it was necessary to define why public libraries are a good place for work, specifically productive collaborative work. Part of this justification was found in this article. This article defines that libraries have public characteristics, is a second place that facilitates work and learning, has diverse people come to it for diverse reasons. Like Bilandzic’s article, here they emphasize libraries as meeting a meeting place. There are four different types of meetings happening. People that come and work with a high degree of interaction and high degree of instrumentality, are collaborating. Public libraries need to focus on creating a space that encourages this type of meetings.

Bennett, Scott, Same Demas, Geoffrey T. Freeman, Bernard Frischer, Kathleen B. Oliver, and Christina A. Peterson. *“Library as Place: Rethinking Roles, Rethinking Space.”* Council on Library and Information Resources. Council on Library and Information Resources, Feb. 2005. Web.

Similarly to the article, Commons 2.0: Library Spaces Designed for Collaborative Learning, this article mentions it is imperative for university libraries to meet new needs of its users, and about how those needs will influence the design of physical space. In planning the design for this physical space, we need to make it known that the adapting purpose of the academic library, a participatory learning experience, is obvious to the user. Similarly, there is an adapting purpose of public libraries as well, participatory, team-based collaborative approach to working. Here, the users also need to be informed of the changing purpose and amenities. This article says the way to do that is through using human-centered design research, similarly to the participatory design approach used in this research project

Bilandzic, Mark, and Marcus Foth. *“Learning beyond Books : Strategies for Ambient Media to Improve Libraries and Collaboration Spaces as Interfaces for Social Learning.”* QUT EPrints. Queensland University Technology, 2013. Web. 02 May 2013.

Like Sinclair’s article on the Commons 2.0, this article emphasizes collaborative spaces. However, the Commons 2.0 is in the context of academic libraries, while Bilandzic believes these spaces should also be in public libraries. The reason being public libraries as physical destinations for information access are being challenged. This is because everyone has access to digital information at their fingertips; they do not need to go to a library for digital information. So what is the point in maintaining physical space for information access? This is the same argument of this project. The physical space should be used to support collaborative work and social learning.

Bilandzic, Mark, and Marcus Foth. *“Libraries as Co-working Spaces : Understanding User Motivations and Perceived Barriers to Social Learning.”* QUT EPrints. Queensland University of Technology, 20 Mar. 2013. Web. 02 May 2013.

Bilandzic aims to use technology to promote random encounters, or what is being defined as unplanned collaboration for this project. The background studies he did to get to that point, is the information being used for this project to help justify public cospaces. He believes public libraries should be used as co-working spaces. Similarly to what Radovanovic says, this article mentions that skills needed in the 21st century are skills that cannot be learned from books, but by social interaction, such as problem solving and collaboration. Also, this article points out that libraries are used as a variety meeting places, meaning people already come to public libraries and interact and work together. A physical space within libraries should encourage these activities and promote collaboration.

Brown, Tim, and Barry Kätz. *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*. [New York]: Harper Business, 2009. Print

Tim Brown is the CEO and president of the company IDEO (an award-winning global design firm that takes a human-centered, design-based approach). He also has earned numerous design awards.

In *Change by Design*, Brown, introduces design thinking. He discusses that “design has the power to enrich our lives by engaging our emotions through image, form, texture, color, sound, and smell”. Emotions make us behave a certain way. So, engaging our emotions by design is a part of designing behaviors within the space, what the space represents. We can design the public cospace by designing how we want people to behave in that space. Since public cospaces need creative behavior for desired collaborative activities, this research project will look at what aspects of the physical environment will affect creative behavior and at how creative behavior affects collaborative activities.

Brown suggests using aspects of human-centered nature of design thinking like empathy and understanding of people to design something in which creates opportunities for active participation (Brown).

Block, Peter. *Community: The Structure of Belonging*. San Francisco: Berrett-Koehler, Publishers, 2009. Print.

“Physical space is more decisive in creating community than we realize.” Block believes that we must be intentional in everything we do, and engage and involve citizens (or potential users) because it is just as important as design expertise, in designing a physical space. Block tells an example that shows how the design process can involve people which increases the chances that the environment created will be community oriented. Ken Cunningham and John Spencer believe that it is important to get people’s perspective who will occupy the space, by observing and imagining what the space might become. They treat their users as producers, not consumers, throughout the process. This is key in how this research project will be employed.

Block says the room is the visible expression of today’s version of tomorrow, meaning “Change the room, change the culture”. Since the physical environment that will be prototyped is already an existing space, there will be no control over the form and shape of the room. However, there may be control over how to occupy the room. The goal is to provide a platform where collaboration can happen.

Coco. “How Coworking Is Changing **how* and *where* We Work.*” [Http://cocomsp.com/](http://cocomsp.com/). CoCo (Coworking and Collaborative Spaces), 15 Mar. 2012. Web. <<http://cocomsp.com/category/collaboration/>>.

The video explains how coworking is reshaping the world of how and where we work. It emphasizes working collaboratively in coworking spaces because people don't work at their offices, home, or coffee shops anymore. It is obvious there is a need for collaborative spaces. The differences between a coworking space and a public cospace is that a coworking space has a membership contracted, along with a hefty price to pay. This space is more for entrepreneurs or people that have long term projects. Also the types of people that come to coworking spaces are usually individuals or small groups that want to network with others in those spaces. For the purposes of this research project, a public cospace is a place that is open to the public for anyone to come into an environment that will not be contracted, or have an applied/accept process. Here, people can collaboratively work for short periods of time, weather it be for a few hours or a few weeks. They may have to reserve a space before hand, however there will not be a contract or applying process. The only terms they will have to adhere to are the library's.

Doorley, Scott, and Scott Witthoft. *Make Space: How to Set the Stage for Creative Collaboration.* Hoboken, NJ: John Wiley & Sons, 2012. Print.

This book was referred to several times throughout this document. Doorley and Witthoft talk about how to make a physical space for collaboration. A template was set out for others to easily follow to create their own space. Within this template many elements matched the designers primary research. Several elements became part of the conceptual framework created. Doorley and Witthoft also define space in a way that was useful for the designer defining the difference between space and place.

Fulton Suri, Jane. “*The Experience Evolution: Developments in Design Practice.*” *The Design Journal* 6.2 (2003): Print.

In this article by Suri, she emphasizes that today, designers have expanded opportunities to not only design for object, but going beyond to interactions with object, spaces, and services. Now, the concept of designing to influence the quality of experience that people enjoy, is important to designers expanded opportunities. Suri mentions that experience is influenced by factors that designers do control like sound, smell, and texture. These behavioral influences are interpreted through human factors such as, physical, emotional, cultural and ecological. In order to better understand what matters to the people we are designing for and the ways that design can enhance their experiences, we need to look at those human factors. Jane uses four classes of methods for understanding what really matter. They are: Learning from data whether secondary sources or our own analysis, looking at people in context, asking people to participate, and trying things ourselves. Some of the types of methods she describes are shadowing, photo-diaries, and role-playing. These are similar methods this research project will took on in order to understand people through human factors in designing for a better experience.

Harrison, Steve, and Paul Dourish. *“Re-Place-ing Space: The Roles of Place and Space in Collaborative Systems.”* Xerox Palo Alto Research Center (1996): n. pag. Print.

Within this project, place and space are both used and referenced for different meanings. It is important to distinguish the two terms so there is no confusion. This article describes the difference between place and space and their roles in a collaborative system.

Malo, Pedro, Joao Sarraipo, Ricardo Jardim-Goncalves, and Adolfo Stieger-Garcia. *“The Cospaces Training System.”* Itaide.org. University of Lisboa, 2008. Web.

This source talks about a project that took place called Cospace Project. Here they defined Cospace as innovative collaborative work environments for individuals and teams in design and engineering. This definition fits the term “cospace” for the purposes of this research project, so this project refers to that definition.

Miller, Chris. *“Setting the Framework for Productive Collaboration.”* Business of Technology. Avanade, 3 Oct. 2012. Web. 16 Feb. 2013.

Miller writes how the business, Avanade, embraces the new trends of technologies like mobility and enterprise collaboration. Avanade has created a single business productivity platform that takes advantage of emerging technologies like social networking, to foster greater collaboration and knowledge sharing. To achieve their vision, they created four principles. These principles are people to people, people to content, people to team, people to corporation. They became the starting base for the conceptual framework and a way to define productive collaboration.

Poggenpohl, Sharon Helmer., and Keiichi Satō. *Design Integrations: Research and Collaboration.* Chicago: Intellect, the University of Chicago, 2009. Print.

Since there are so many definitions of collaboration, it is necessary to define what the boundaries of collaboration means for the purpose of this research project. Out of the 12 definitions in this book, not 1 of them was exactly how this research project needed it to be defined. So, the combination of Alain Rochon and Jay Rutherford’s definitions made up the meaning for this project. “A group of people with different but complimentary capabilities, expertise, knowledge, way of working, and personality to solve a particular problem or task, or build disseminate knowledge within a specific time frame”. This definition fits the parameters of this project because this is about already existing groups with different things to bring to the table in order to accomplish something, whether making it to the end goal or expanding knowledge.

This book also talks about the patterns found in each definition of collaboration. They are, “who” participates, “what” they are doing, “why” they are doing this, and “how” they are doing that. These are important factors to consider when thinking about the purpose for collaborative spaces as well, so the research project will look into incorporating these into the framework for enabling the production of public cospaces in libraries.

Radovanovic, Danica. “*Work, Play & Learn! Using Libraries for Social Learning, Impact and Collaboration.*” Australian Science. Australian Science, 13 Mar. 2013. Web. 02 May 2013.

This article talks about how public libraries should utilize the interactive activities they already emphasize, with this dynamic that leads towards a collaborative, social construction, and sharing or information knowledge. Radovanovic points out that critical thinking, and problem solving are the skills needed in the 21st century. Therefore, library spaces should support these skills with physical, open, free, comfortable, space for meetings and interactions.

Sanders, Elizabeth B., Eva Brandt, and Thomas Binder. “*A Framework for Organizing the Tools and Techniques of Participatory Design.*” www.maketools.com. Make Tools, Nov.-Dec. 2010. Web.

Elizabeth Sanders has a PhD of Experimental Psychology at The Ohio State University and is currently the president of Make Tools. She also was the co-founder of SonicRim, Ltd, along with many other accomplishments in the design world.

In this article, Sanders lays out many methods that can be used for different steps and for different reasons to use during participatory design. This research project utilized methods like those in her framework, since she used a participatory design approach.

In order to use participatory design, it is important to define it in terms of what it means for your context. This project used a combination of Liz Sanders definitions, “An approach to design that actively involves the potential users or stakeholders in various co-design activities throughout the design process”. This definition makes sense with the parameters of this project because the users ultimately helped the designer understand what should be in a physical cospace.

Sanders, Elizabeth B., Dr., and Marlene Ivey, Ms. “*Designing a Physical Environment for Co-experience and Assessing a Participant Use.*” www.maketools.com. Make Tools, Nov. 2006. Web.

This research project is following the footsteps of Sanders and Ivey’s article. The aim of their research was to prototype a co-experience environment and to question how the design of co-experience environment might help to contribute to new knowledge in design. This research project used participatory design (to prototype a physical environment) and current theoretical concepts of collaboration to create a framework that supports the concept of public cospaces.

Sanders and Ivey designed a probe pack for the initial phase of their research. The package was sent to each participant to establish individual perspectives on their thinking/working styles, then returned within a few weeks. Certain themes emerged from this data, Nature, Activity/Motion, Visual characteristics, Social interactions, Time/privacy, and Sound. This research project used many participatory design research methods to get the perspective of potential users. The insights that came from these types of methods, allowed the designer to prototype a physical cospace.

Silver, Howard. *“Use of Collaborative Spaces in an Academic Library.”* Dspace.mit.edu. Simmons College, May 2007. Web.

This article talks about a study that took place in public libraries to see how the libraries functioned as a public space. The research showed that the libraries had a high gate count, and were active centers in the community. Their observations concluded that the libraries may need to become more interactive places (Given and Leckie , 2003). The team-based collaborative approach to working within public library cospaces that this research project is proposing, promotes an interactive atmosphere.

Another study in this article was to look at library space improvements, and the results of this study clearly show that collaborative spaces do support collaborative activity (Powell, 2002). So, in providing a space and amenities for collaboration, people will better be able to practice collaborative activities.

Sinclair, Bryan. *“Commons 2.0: Library Spaces Designed for Collaborative Learning.”* Educates Review Online. Educates Review Online, 9 Nov. 2007. Web.

The original purpose of libraries, a hub for finding any information and all sources, is no longer necessary since most people have access to any information they want at their fingertips. In this article, it talks about how libraries must adapt to foster student learning in new and creative ways. Designing library spaces that promote collaboration will make users feel like they have a creative place to study and work. Here they are referring to university libraries filled with students, however, this can be transferable to public libraries and that collaboration is 21st century skill for working and learning.

Commons 2.0 in academic libraries is one of the current theoretical concepts this research project will be studying in order to help create a framework that supports the development of cospaces in public libraries.

Western Governors University. *“11 Ways Your Study Environment Affects Productivity.”* Western Governors University, 04 Oct. 2012. Web.

Often people do not notice or think about how the environment affects them or their behaviors. However, the environment can play a large role in how it affects people. This article emphasizes that it is important to have the right place to study, because the study environment can be a big factor in the success of your learnings and how you apply those learnings. They talk about 11 different ways your surroundings impact your studying and how you can make your study environment more conducive to learning. They are: Music, Background noise, Smells, Lighting, Temperature, Something fun/interesting, Comfort, Associations with other activities, The clock, Other people, and Fengshui. These can be transferable for productivity in a working environment.

Literature Matrix

Literature	Concepts/Keywords								
	21st century skills	Collaboration	Design	Libraries	Participatory	Productivity	Public	Social Interaction	Space
Aabo, Audunson									
Bennett, Demas, Freeman,Frisher									
Bilandzic, Foth									
Bilandzic, Foth									
Brown, Kätz									
Block									
CoCo									
Doorley, Witthoft									
Fulton									
Hamson, Dourish									
Malo, Sarraipo, Ricardo, Adolfo									
Miller									
Poggenpohl, Satō									
Randovanovic									
Sanders, Brandt, Binder									
Sanders/Ivey									
Silver									
Sinclair									
Western Governors Univ.									

Appendix B

Why Libraries Should Be the Next Great Start-Up Incubators...

In The Atlantic Cities Place Matters is a short article saying libraries should bring in co-working spaces. Their reasoning behind this novel idea is that originally libraries were the home to self-starters and self-employed people. “When you look back in history, they had philosophers and mathematicians and all sorts of folks who would get together and solve the problems of their time,” says Tracy Lea, the venture manager with Arizona State University’s economic development and community engagement arm.

Essentially, libraries as co-working spaces is an old idea that should be brought back in today’s libraries. This article also mentions that libraries have many things a 21st century innovator could need such as Internet access, work space, reference materials, professional guidance.

Arizona State is actually planning a program to pilot co-working business incubators inside public libraries. Librarians will be trained to help direct people on how to find those resources. In the designers framework for this project of public cospaces, one of the properties within the practical principle is that people should have an understanding of purpose within the space; i.e. collaboration. Because this is a new idea to many, people that will use the space have to be educated and understand that the space is for social interaction and collaboration.

The article ends with a quote referring to the fact that having libraries as co-working spaces allows everyone to be involved in entrepreneurs. This idea is the same idea that the designer refers to in her project. The purpose of having public cospaces are to give everyone access to be innovative and have personal growth.

Would More People Use the Public Library If It Had a Water Slide?...

Another short article by Atlantic Cities Place Matters, talks about the use of libraries. Poland’s National library did a survey and the results were positive. 56 percent of Poles had not read a book in the past year, either in hard or electronic form. This statistic shows that people are not using libraries for books. Hugon Kowalski believes that many people will not flock to it unless it offers amenities other than plopping down with a book

Mixed-use library is an idea that a few cities over the world have already experimented with. Kowalski took this idea and built a water slide into a library, while some have added concerts, art shows and a piano room.

This mixed-use library idea could be utilized by bringing in something much more practical to libraries like, cospaces. The designer of this cospace project, she presents that cospaces can bring mixed-use to libraries. They should offer a hub space with mingling, food, and some play, along with multiple ways to work.

"Being open to the need for change and having the management flexibility to enact that change is what builds great public spaces, cities, and towns".
- Project for public spaces

Public Space Characteristics

When considering doing a project in the public realm, public space should be looked at including its uses, people, identity, and spatial characteristics of the place. Depending on what kind of public place being considered, these characteristics will not always be the same.

Uses

- Social Interaction
- Passive Recreation (solitary and group)
- Active Recreation - Sport (solitary and group)
- Habitat
- Resource Production
- Resource Remediation

People (Users)

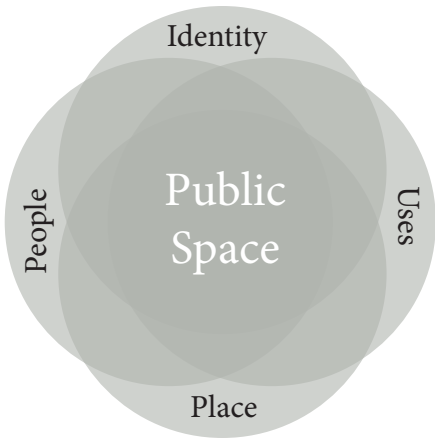
- Children
- Adolescents
- Adults
- Seniors
- Dogs and other species

Identity (Image of Place)

- Memory
- Identity

Place (Spatial Characteristics)

- Area
- Enclosure Percentage
- Enclosure Height
- Permeable Surface Percentage
- Elevation Change
- Number of Entrances
- Places to Sit
- Noise Level



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